



Des Gillen
President
 BP-Husky Refining LLC
 4001 Cedar Point Road
 Oregon, OH 43616
 P 567.698.4529
 des.gillen@se1.bp.com

City of Toledo
 Division of Environmental Services
 348 S. Erie Street
 Toledo, OH 43604
 Attn.: Peter Park

RE: CMS Summary & Data Assessment Report – 4th Quarter 2021

Dear Sir or Madam:

Attached is the revised CMS Summary Report and Data Assessment Report for BP-Husky Refining LLC for the period of October 1, 2021 through December 31, 2021.

CMS Summary Report (Attachment A)

A complete list of emissions units and pollutants monitored are in Table 1; Summary Reports are included in Attachment A. Excess Emissions and Monitoring Systems Performance Report is not required under 40 CFR 60.7(d) if the total duration of excess emissions is less than 1% and the CMS downtime is less than 5% of the total operating time for the quarter. Unless where noted in Table 1, these criteria were met for the units listed.

Table 1. Emission Units and Pollutants Monitored

Location/Emission Unit	Parameter	Quarter 4 2021 Downtime (% unit operating time)	Notes
TIU Fuel Gas Mix Drum	H ₂ S in Fuel Gas		
- B015 - Crude 1 Furnace		0.00	
- B017 - Coker 2 Furnace		0.00	
- B019 - Crude Vac 2 Furnace		0.00	
- B022 - Naphtha Treater Furnace		0.00	
- B029 - DHT A-Train Furnace		0.00	
- B030 - BGOT Furnace		0.00	
- B031 - Vac 1 Furnace		0.00	
- B032 - Coker 3 Furnace		0.00	
- B033 - East B-GOT Furnace		0.00	
- B034 – East Alstom Boiler		0.00	
- B035 – West Alstom Boiler		0.00	
- P007 - FCC/CO Boiler		0.00	

CMS Summary & Data Assessment Report – 4Q2021

Location/Emission Unit	Parameter	Quarter 4 2021 Downtime (% unit operating time)	Notes
TIU Fuel Gas Mix Drum			
- B015 - Crude 1 Furnace	Total Sulfur in Fuel Gas	3.35	
- B019 - Crude Vac 2 Furnace		3.35	
- B022 - Naphtha Treater Furnace		3.35	
- B029 - DHT A-Train Furnace		3.35	
- B030 - BGOT Furnace		3.35	
- B031 - Vac 1 Furnace		3.35	
- B032 - Coker 3 Furnace		3.37	
- B033 - East B-GOT Furnace		3.35	
- B034/B035 – East & West Alstom Boilers		3.35	
East Side Fuel Gas Mix Drum			
- B008 - Iso 2 Feed Heater	H ₂ S in Fuel Gas	0.00	
- B009 - Iso 2 Stabilizer Reboiler		0.00	
- B010 - Iso 2 Splitter Reboiler		0.00	
B036 - Reformer 3 Furnace	H ₂ S	0.00	
P003 - East Flare (see note A)	H ₂ S	0.18	
P003 - East Flare	Total Sulfur	0.09	
P004 – West Flare Vent Gas (see note A)	H ₂ S	1.81	
P004 – West Flare “C-Valve” Vent Gas	H ₂ S	0.00	
P004 – West Flare Vent Gas	Total Sulfur	0.32	
P004 – West Flare “C-Valve” Vent Gas	Total Sulfur	3.35	
B036 – Reformer 3 Furnace	NO _x	0.05	
P007 – FCCU/CO Boiler Bypass (see note B)	CO	0.00	
P007 – FCCU/CO Boiler Bypass (see note B)	NO _x	0.00	
P007 – FCCU/CO Boiler Bypass (see note B)	SO ₂	0.00	
P007 – CO Boiler Exhaust	CO	0.41	
P007 – CO Boiler Exhaust	NO _x	0.41	
P007 – CO Boiler Exhaust	SO ₂	0.41	
P009 - Sulfur Recovery Unit with #1 (see note D)	SO ₂	0.50	>1% EE ^D
P037 - Sulfur Recovery Units #2 & #3	SO ₂	0.27	>1% EE ^D
B034 – East Alstom Boiler (see note C)	NO _x	0.05	
B035 – West Alstom Boiler (see note C)	NO _x	0.41	

Note A: P003/P004 East & West Flare

The attached H₂S tables identify all emissions in excess of the Subpart Ja H₂S limit of 162 ppm_v on a 3-hour rolling average. If an event did not occur for 3 consecutive hours, then it does not meet the 3-hour averaging requirement and therefore is not considered excess emissions. If a 3-hour event exceeds the 100,000 ppm_v span limit of the H₂S CMS, then the Total Sulfur analyzer data was used for the H₂S value.

Note B: P007 – FCCU/CO Boiler Bypass

The purpose of these CEMS are to continuously monitor the listed (CO, NO_x, & SO₂) emissions from the FCCU Regenerator exhaust in the event of a CO Boiler bypass while there is feed to the FCCU. Otherwise, compliance with the listed limits for the FCCU is determined from continuous emissions monitoring of the CO Boiler Exhaust stack. Although this source is not subject to 40 CFR Part 60, Section C.12.(d)(7) of P0104782 (as set forth by Permits-to-Install 04-01290 and P0105902) requires monitoring per 40 CFR Part 60.11. As

CMS Summary & Data Assessment Report – 4Q2021

noted in Section C.12.(e)(4) of P0104782, the refinery has opted to follow the reporting requirements under 40 CFR 60.7. 40 CFR 60.7(c) requires the submission of an Excess Emissions and Monitoring Systems Performance Report and Summary Report Form.

Note C: B034/B035 East & West Alstom Boiler

The attached data tables include supplemental reporting for NOx CEMS records required by 40CFR49b(i).

Note D: P009 - Sulfur Recovery Unit with #1

This is not a deviation of 40 CFR 60 Subpart J standard pursuant to 40 CFR 60.8(c), which states: emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.

Details of all downtime or excess emission incidents are provided in the summary tables in Attachment A.

Data Assessment Report (Attachment B)

In accordance with the terms and conditions of their permits, Attachment B includes the Continuous Emission Monitor (CEM) Data Assessment Report (DAR) for this quarter. Table 2 below is a summary of Cylinder Gas Audits conducted this quarter. Where noted in Table 2, Relative Accuracy Test Audits (RATAs) were conducted this quarter; these reports were submitted previously via Air Services.

Table 2. Cylinder Gas Audit Summary

Location/Emission Unit	Parameter	Notes
East Side Fuel Gas Mix Drum (B008, B009, B010)	H ₂ S	
TIU Fuel Gas Mix Drum (B015, B017, B019, B022, B029, B030, B031, B032, B033, B034, B035, P007)	H ₂ S	
B036 - Reformer 3 Heater H ₂ S CMS	H ₂ S	
P003 - East Flare	H ₂ S	
P004 - West Flare	H ₂ S	
P003 - East Flare (low & high ranges)	Total Sulfur	
P004 - West Flare (low & high ranges)	Total Sulfur	
TIU Fuel Gas Mix Drum (B015, B017, B019, B022, B029, B030, B031, B032, B033, B034, B035, P007)	Total Sulfur	
B036 - Reformer 3 NOx/O ₂ CEMS	NOx, O ₂	
B034 - East Alstom Boiler	NOx, O ₂	
B035 - West Alstom Boiler	NOx, O ₂	
P007 - FCCU/CO Boiler	SO ₂ , NOx, CO, O ₂	
P007 - FCC Regen Line	SO ₂ , NOx, CO, CO ₂ , O ₂	
P009 - SRU #1	SO ₂ , O ₂	
P037 - SRU #2 & #3 (TRP SRU)	SO ₂ , O ₂	

The DAR also includes out-of-control (OOC) times for the FCCU/CO Boiler CO CEMS, FCC Regen Line CO, O₂, & CO₂ CEMS, the SRU#1 SO₂ & O₂ CEMS, and the TRP SRU SO₂ & O₂ CEMS based on the OOC requirements defined by the MACT general requirements, 40 CFR Part 63.8(c)(7).

CMS Summary & Data Assessment Report – 4Q2021

CEMS calendar tons reporting

In accordance with the Title V permit, Table 3 includes calendar tons per quarter for certain pollutants for Emission units B036, P007, P003, and P004.

Table 3. CEMS Reporting requirement with calendar tons

Page	Citation	EU	Description	Language	Tons
63	B.5.b)(2)b.v	B036	Reformer Heater	Units subject to NSPS Ja NOx monitoring - quarterly reports require "the total NOx emissions for the calendar quarter (tons)" to be included with the quarterly EER for NOx CEMs	7.57
181	c.12.e)(2)b.v	P007	FCCU	Quarterly EER required for SO2 CEM requires "the total SO2 emissions for the calendar quarter (tons)" to be included	141.83
183	c.12.e)(4)b.v	P007	FCCU	Quarterly EER required for NOx CEM requires "the total NOx emissions for the calendar quarter (tons)" to be included	56.44
290	c.20.e)(2)b.v	P037	SRU 2/3	Quarterly EER required for SO2 CEM requires "the total SO2 emissions for the calendar quarter (tons)" to be included	10.99
428	c.36.e)(4)b.v	B034/B035	Alstom Boilers	Quarterly EER required for NOx CEM requires "the total NOx emissions for the calendar quarter (tons)" to be included	7.71
485	c.40.e)(5)b.v	P003/P004	East/West Flare	Quarterly EER required for H2S CEM requires "the total hydrogen sulfide emissions for the calendar quarter (tons)" to be included	1.66
487	c.40.e)(6)b.v	P003/P004	East/West Flare	Quarterly EER required for Total Sulfur CEM requires "the total sulfur emissions for the calendar quarter (tons)" to be included	6.49

If you have any questions concerning this report, please contact Joan Anderson (joan.anderson@bp.com or 567-698-4405), or Hannah Placzek (Hannah.placzek@bp.com).

Based on information and belief formed after reasonable inquiry, the statements and information in this report are true, accurate, and complete.

Sincerely,

DocuSigned by:

 90F20640AD13450...

Des Gillen
 President - BP-Husky Refining LLC

Attachment A – CMS Summary Report
 Attachment B – Data Assessment Report

Attachment A – CMS Summary Report

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 11/16/2021

Process Unit(s) Description: Crude 1 Furnace (0448020007B015)

Total Source Operating Time in Reporting Period²: 2,209 hr


Emission Data Summary		CMS Perfomance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	8	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	8	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.36	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.00
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 
90F20640AD13450...

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 11/16/2021

Process Unit(s) Description: Coker 2 Furnace (0448020007B017)

Total Source Operating Time in Reporting Period²: 1,956 hr

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	8	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	8	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.41	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.00
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: *Des Gillen*

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022
Company: BP-Husky Refining LLC
Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average
Address: 4001 Cedar Point Road, Oregon, Ohio 43616
Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300
Date of Latest CMS Certification or Audit: 11/16/2021
Process Unit(s) Description: Crude Vac 2 Furnace (0448020007B019)
Total Source Operating Time in Reporting Period²: 2,209 hr

Emission Data Summary		CMS Perfomance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	8	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	8	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.36	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.00
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.
Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen
DocuSigned by:
Signature: *Des Gillen*
90F20640AD13450...
Title: President - BP-Husky Refining LLC
Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 11/16/2021

Process Unit(s) Description: Naphtha Treater Furnace (0448020007B022)

Total Source Operating Time in Reporting Period²: 2,209 hr


Emission Data Summary		CMS Perfomance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	8	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	8	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.36	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.00
<small>2 Record all times in hours.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant:

H₂S

Reporting Period Dates:

From:

October 1, 2021

To:

January 1, 2022

Company:

BP-Husky Refining LLC

Emission Limitation:

0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address:

4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.:

Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit:

11/16/2021

Process Unit(s) Description:

DHT A-Train Furnace (0448020007B029)

Total Source Operating Time in Reporting Period²:

2,209

hr

(TIU fuel gas was combusted for 2,209 hours and natural gas was combusted for 0 hours for a total of 2,209 hours this quarter)

Emission Data Summary		CMS Perfomance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	8	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	8	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.36	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.00
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name:

Des Gillen

Signature:

DocuSigned by:

Des Gillen

90F20040AD13430...

Title:

President - BP-Husky Refining LLC

Date:

1/31/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 11/16/2021

Process Unit(s) Description: BGOT Furnace (0448020007B030)

Total Source Operating Time in Reporting Period²: 2,209 hr (TIU fuel gas was combusted for 2,209 hours and natural gas was combusted for 0 hours for a total of 2,209 hours this quarter)

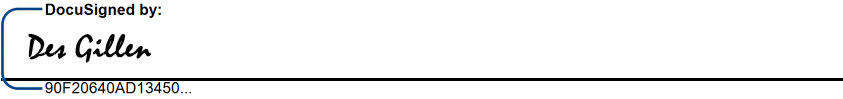
Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	8	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	8	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.36	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.00
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 11/16/2021

Process Unit(s) Description: Vac 1 Furnace (0448020007B031)

Total Source Operating Time in Reporting Period²: 2,209 hr


Emission Data Summary		CMS Perfomance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	8	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	8	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.36	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.00
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature:  90F20640AD13450...

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 11/16/2021

Process Unit(s) Description: Coker 3 Furnace (0448020007B032)

Total Source Operating Time in Reporting Period²: 2,194 hr


Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	8	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	8	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.36	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.00
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: **From:** October 1, 2021 **To:** December 1, 2021

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 11/16/2021

Process Unit(s) Description: East BGOT Furnace (0448020007B033)

Total Source Operating Time in Reporting Period²: 2,209 hr

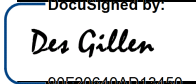
Emission Data Summary		CMS Perfomance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	8	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	8	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.36	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.00
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H_2S

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 11/16/2021

Process Unit(s) Description:	East Alstom Boiler (0448020007B034)
-------------------------------------	-------------------------------------

Source Operating Time in Reporting Period²:	<u>2,209 hr</u>	(TIU fuel gas was combusted for 0 hours and natural gas was combusted for 2,209 hours for a total of 2,209 hours this quarter)
---	-----------------	--

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.00	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.00
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

The West Alstom Boiler combusted a combination of natural gas and TIU Mix Drum fuel gas this quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature:  DocuSigned by:
Des Gillen
90F20640AD13450...

Title: President - BP-Husky Refining LLC

1/31/2022

Date: _____

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant:

H₂S

Reporting Period Dates:

From: October 1, 2021 To: January 1, 2022

Company:

BP-Husky Refining LLC

Emission Limitation:

0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address:

4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.:

Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit:

11/16/2021

Process Unit(s) Description:

West Alstom Boiler (0448020007B035)

Total Source Operating Time in Reporting Period²:

2,209 hr

(TIU fuel gas was combusted for 2,209 hours and natural gas was combusted for 0 hours for a total of 2,209 hours this quarter)

Emission Data Summary		CMS Perfomance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	8	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.36	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.00
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

The West Alstom Boiler combusted a combination of natural gas and TIU Mix Drum fuel gas this quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name:

Des Gillen

Signature:

DocuSigned by:

Des Gillen

90F20640AD13450...

Title:

President - BP-Husky Refining LLC

1/31/2022

Date:

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 11/16/2021

Process Unit(s) Description: FCC/CO Boiler (0448020007P007)

Total Source Operating Time in Reporting Period²: 2,209 hr

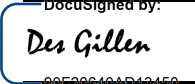
Emission Data Summary		CMS Perfomance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	8	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	8	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.36	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.00
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - TIU MIX DRUM H2S CMS REPORT FOR 4TH QUARTER 2021

EMISSIONS UNIT ID/Description	Reporting Requirement (choose		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION		PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)	
	Quarterly	Semi-Annual		DEVIATION DURATION							DESCRIPTION AND MAGNITUDE OF THE DEVIATION
				Date / Time Start	Date / Time End						
B015 - Crude 1 Furnace; B019 - Crude 2 Furnace; B022 - Naphtha Treater Furnace; B029 - DHT A - Train Furnace B030 - DHT B - Train Furnace; B031 - Vac 1 Furnace; B032 - Coker 3 Furnace B033 - East BGOT Furnace; B035 - West Alstom Boiler; P007 - FCC/CO Boiler	Yes	No	Continuous Monitoring System	10/8/2021 at 13:00 hours	10/8/2021 at 16:00 hours	CEMS excess emissions for 180 minutes	Lean oil stripper fan in the Coker Gas plant was taken out of service for a routine PM at the same time as an increase in gas from Coker 3 coming off a spall.	Lean oil stripper fan was placed back in service. Lean oil stripper flow to the Absorber stripper was increased. Coker 3 rate was reduced.	No	10/8/2021	10/8/2021
B015 - Crude 1 Furnace; B019 - Crude 2 Furnace; B022 - Naphtha Treater Furnace; B029 - DHT A - Train Furnace B030 - DHT B - Train Furnace; B031 - Vac 1 Furnace; B032 - Coker 3 Furnace B033 - East BGOT Furnace; B035 - West Alstom Boiler; P007 - FCC/CO Boiler	Yes	No	Continuous Monitoring System	11/30/2021 at 01:00 hours	11/30/2021 at 02:00 hours	CEMS excess emissions for 60 minutes	Elevated amine temperatures resulted in decreased treating capacity at the bulk amine contactor.	Acid gas flow was diverted from the bulk amine contactor and coker rates were reduced.	No	11/30/2021	12/1/2021
B015 - Crude 1 Furnace; B019 - Crude 2 Furnace; B022 - Naphtha Treater Furnace; B029 - DHT A - Train Furnace B030 - DHT B - Train Furnace; B031 - Vac 1 Furnace; B032 - Coker 3 Furnace B033 - East BGOT Furnace; B035 - West Alstom Boiler; P007 - FCC/CO Boiler	Yes	No	Continuous Monitoring System	12/15/2021 at 14:00 hours	12/15/2021 at 16:00 hours	CEMS excess emissions for 120 minutes	Elevated amine temperatures resulted in decreased treating capacity at the bulk amine contactor.	Acid gas flow was diverted from the bulk amine contactor and coker rates were reduced.	No	12/15/2021	12/16/2021
B015 - Crude 1 Furnace; B019 - Crude 2 Furnace; B022 - Naphtha Treater Furnace; B029 - DHT A - Train Furnace B030 - DHT B - Train Furnace; B031 - Vac 1 Furnace; B032 - Coker 3 Furnace B033 - East BGOT Furnace; B035 - West Alstom Boiler; P007 - FCC/CO Boiler	Yes	No	Continuous Monitoring System	12/27/2021 at 12:00 hours	12/27/2021 at 14:00 hours	CEMS excess emissions for 120 minutes	Elevated amine temperatures resulted in decreased treating capacity at the bulk amine contactor. A lean amine stripper air cooler tripped off during this time which contributed to the elevated lean amine temperatures.	Operations restarted the lean amine stripper air cooler and diverted some acid gas away from the bulk amine contactor.	No	12/27/2021	12/27/2021

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: Total Sulfur


Reporting Period Dates: From: October 1, 2021 To: January 1, 2022
Company: BP-Husky Refining LLC
Emission Limitation: 21.02 tons SO2 per rolling 12-month period
Address: 4001 Cedar Point Road, Oregon, Ohio 43616
Monitor Manufacturer and Model No.: Thermo Scientific SOLA II, SN: SL-09030713
Date of Latest CMS Certification or Audit: 11/2/2021
Process Unit(s) Description: Crude Vac 2 Furnace (0448020007B019)
Total Source Operating Time in Reporting Period²: 2,209 hr

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	26
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	45
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	3
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	74
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	3.35
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen
Signature: 
Title: President - BP-Husky Refining LLC
Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: Total Sulfur

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 6.45 tons SO2 per rolling 12-month period

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Thermo Scientific SOLA II, SN: SL-09030713

Date of Latest CMS Certification or Audit: 11/2/2021

Process Unit(s) Description: Naphtha Treater Furnace (0448020007B022)

Total Source Operating Time in Reporting Period²: 2,209 hr


Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	26
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	45
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	3
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	74
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	3.35
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: Total Sulfur

Reporting Period Dates:

From: October 1, 2021

To: January 1, 2022

Company:

BP-Husky Refining LLC

Emission Limitation:

2.32 tons SO2 per rolling 12-month period

Address:

4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.:

Thermo Scientific SOLA II, SN: SL-09030713

Date of Latest CMS Certification or Audit:

11/2/2021

Process Unit(s) Description:

DHT A-Train Furnace (0448020007B029)

Total Source Operating Time in Reporting Period²:

2,209

hr

(TIU fuel gas was combusted for 2,209 hours and natural gas was combusted for 0 hours for a total of 2,209 hours this quarter)

Emission Data Summary		CMS Perfomance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	26
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	45
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	3
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	74
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	3.35
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name:

Des Gillen

Signature:

DocuSigned by:

Des Gillen

90F20640AD13450...

Title:

President - BP-Husky Refining LLC

Date:

1/31/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: Total Sulfur

Reporting Period Dates:

From: October 1, 2021

To: January 1, 2022

Company:

BP-Husky Refining LLC

Emission Limitation:

3.86 tons SO2 per rolling 12-month period

Address:

4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.:

Thermo Scientific SOLA II, SN: SL-09030713

Date of Latest CMS Certification or Audit:

11/2/2021

Process Unit(s) Description:

BGOT Furnace (0448020007B030)

Total Source Operating Time in Reporting Period²:

2,209

hr

(TIU fuel gas was combusted for 2,209 hours and natural gas was combusted for 0 hours for a total of 2,209 hours this quarter)

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	26
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	45
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	3
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	74
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	3.35
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name:

Des Gillen

Signature:

DocuSigned by:

Des Gillen

90F20640AD13450...

Title:

President - BP-Husky Refining LLC

Date:

1/31/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: Total Sulfur

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 11.62 tons SO2 per rolling 12-month period

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Thermo Scientific SOLA II, SN: SL-09030713

Date of Latest CMS Certification or Audit: 11/2/2021

Process Unit(s) Description: Vac 1 Furnace (0448020007B031)

Total Source Operating Time in Reporting Period²: 2,209 hr


Emission Data Summary		CMS Perfomance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	26
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	45
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	3
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	74
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	3.35
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: Total Sulfur

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 20.46 tons SO2 per rolling 12-month period

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Thermo Scientific SOLA II, SN: SL-09030713

Date of Latest CMS Certification or Audit: 11/2/2021

Process Unit(s) Description: Coker 3 Furnace (0448020007B032)

Total Source Operating Time in Reporting Period²: 2,194 hr

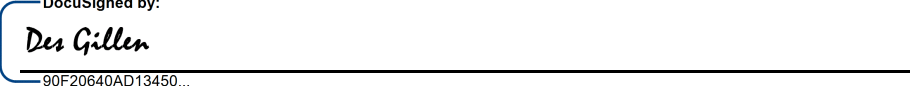
Emission Data Summary		CMS Perfomance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	26
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	45
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	3
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	74
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	3.37
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: Total Sulfur

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 3.86 tons SO2 per rolling 12-month period

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Thermo Scientific SOLA II, SN: SL-09030713

Date of Latest CMS Certification or Audit: 11/2/2021

Process Unit(s) Description: East BGOT Furnace (0448020007B033)

Total Source Operating Time in Reporting Period²: 2,209 hr


Emission Data Summary		CMS Perfomance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	26
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	45
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	3
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	74
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	3.35
<small>2 Record all times in hours.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 
90F20640AD13450...

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: Total Sulfur

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 3.86 tons SO2 per rolling 12-month period

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Thermo Scientific SOLA II, SN: SL-09030713

Date of Latest CMS Certification or Audit: 11/2/2021

Process Unit(s) Description: East Alstom Boiler (0448020007B034) and West Alstom Boiler (0448020007B035)

Source Operating Time in Reporting Period²: 2,209 hr (TIU fuel gas was combusted for 2,209 hours in at least one of the Alstom Boilers for the quarter. Natural gas was combusted for 0 hours in both Alstom Boilers for the quarter.)


Emission Data Summary		CMS Perfomance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	26
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	45
c. Process Problems	0	c. Quality assu s	0
d. Other known causes	0	d. Other known causes	3
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	74
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	3.35
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

The East Alstom Boiler combusted only natural gas this quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - TIU MIX DRUM TS CMS REPORT FOR 4TH QUARTER 2021											
EMISSIONS UNIT ID/Description	Reporting Requirement (choose		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)
	Quarterly	Semi-Annual		DEVIATION DURATION		DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
				Date / Time Start	Date / Time End						
B015 - Crude 1 Furnace; B022 - Naphtha Treater Furnace; B029 - DHT A - Train Furnace B030 - DHT B - Train Furnace; B031 - Vac 1 Furnace; B032 - Coker 3 Furnace B033 - East BGOT Furnace; B035 - West Alstom Boiler; P007 - FCC/CO Boiler	Yes	No	Continuous Monitoring System	10/1/2021 at 09:00 hours	10/3/2021 at 06:00 hours	CEMS out-of-control time for 2700 minutes	Vivicom failed to complete daily validation	Recalibrated and Returned Analyzer to service once identified	No	No Reports	No Reports
B015 - Crude 1 Furnace; B022 - Naphtha Treater Furnace; B029 - DHT A - Train Furnace B030 - DHT B - Train Furnace; B031 - Vac 1 Furnace; B032 - Coker 3 Furnace B033 - East BGOT Furnace; B035 - West Alstom Boiler; P007 - FCC/CO Boiler	Yes	No	Continuous Monitoring System	11/22/2021 at 09:00 hours	11/22/2021 at 11:00 hours	CEMS downtime for 120 minutes	Sample System Maintenance	Semi-annual PM as well as sample valve replacements.	No	No Reports	No Reports
B015 - Crude 1 Furnace; B022 - Naphtha Treater Furnace; B029 - DHT A - Train Furnace B030 - DHT B - Train Furnace; B031 - Vac 1 Furnace; B032 - Coker 3 Furnace B033 - East BGOT Furnace; B035 - West Alstom Boiler; P007 - FCC/CO Boiler	Yes	No	Continuous Monitoring System	11/22/2021 at 13:00 hours	11/22/2021 at 14:00 hours	CEMS downtime for 60 minutes	Recalibrate for Drift	Calibration gas checks, recalibrated and returned to service.	No	No Reports	No Reports
B015 - Crude 1 Furnace; B022 - Naphtha Treater Furnace; B029 - DHT A - Train Furnace B030 - DHT B - Train Furnace; B031 - Vac 1 Furnace; B032 - Coker 3 Furnace B033 - East BGOT Furnace; B035 - West Alstom Boiler; P007 - FCC/CO Boiler	Yes	No	Continuous Monitoring System	11/28/2021 at 11:00 hours	11/29/2021 at 13:00 hours	CEMS downtime for 1560 minutes	Sample Heater Failure	Sample heater failed. It was repaired, recalibrated, and returned to service	No	No Reports	No Reports

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 30028039490020

Date of Latest CMS Certification or Audit: 11/15/2021

Process Unit(s) Description: Iso 2 Feed Heater (0448020007B008)

Total Source Operating Time in Reporting Period²: 2,209 hr

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.00	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.00
<small>² Record all times in hours.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: DocuSigned by:
Des Gillen
90F20640AD13450...

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022
Company: BP-Husky Refining LLC
Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average
Address: 4001 Cedar Point Road, Oregon, Ohio 43616
Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 30028039490020
Date of Latest CMS Certification or Audit: 11/15/2021
Process Unit(s) Description: Iso 2 Stabilizer Reboiler (0448020007B009)
Total Source Operating Time in Reporting Period²: 2,209 hr

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.00	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.00
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen
DocuSigned by:
Signature: *Des Gillen*
90F20640AD13450...
Title: President - BP-Husky Refining LLC
Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022
Company: BP-Husky Refining LLC
Emission Limitation: 0.10 gr H₂S/dscf fuel gas on a 3-hr rolling average
Address: 4001 Cedar Point Road, Oregon, Ohio 43616
Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 30028039490020
Date of Latest CMS Certification or Audit: 11/15/2021
Process Unit(s) Description: Iso 2 Splitter Reboiler (0448020007B010)
Total Source Operating Time in Reporting Period²: 2,209 hr

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.00	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.00
2 Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.
Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen
Signature: *Des Gillen*
Title: President - BP-Husky Refining LLC
Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - EAST SIDE MIX DRUM H2S CMS REPORT FOR 4TH QUARTER 2021											
EMISSIONS UNIT ID/Description	Reporting Requirement (choose)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)
	Quarterly	Semi-Annual		DEVIATION DURATION		DESCRIPTION AND MAGNITUDE OF THE					
				Date / Time Start	Date / Time End						
B008 - Iso 2 Feed Heater B009 - Iso 2 Stabilizer Reboiler B010 - Iso 2 Splitter Reboiler	Yes	No	Continuous Monitoring System	No downtime or excess emissions during this reporting quarter.							

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 162 ppmv H₂S in fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 30029994471080

Date of Latest CMS Certification or Audit: 11/15/2021

Process Unit(s) Description: Reformer 3 Furnace (0448020007B036)

Total Source Operating Time in Reporting Period²: 2,209 hr (Reformer 3 fuel gas was combusted for 2,209 hours and natural gas was combusted for 0 hours for a total of 2,209 hours this quarter)

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.00	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.00
² Record all times in minutes.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

The Reformer 3 Furnace combusted a combination of Reformer 3 fuel gas and natural gas this quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 60 ppmv H₂S in fuel gas on a 365-day rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 30029994471080

Date of Latest CMS Certification or Audit: 11/15/2021

Process Unit(s) Description: Reformer 3 Furnace (0448020007B036)

Total Source Operating Time in Reporting Period²: 2,209 hr

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.00	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.0
² Record all times in minutes.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

The Reformer 3 Furnace combusted a combination of Reformer 3 fuel gas and natural gas this quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: _____

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - REFORMER 3 FURNACE H2S CMS REPORT FOR 4TH											
EMISSIONS UNIT ID/Description	Reporting Requirement (choose one or both)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION		PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)	
	Quarterly	Semi- Annual		DEVIATION DURATION							DESCRIPTION AND MAGNITUDE OF THE DEVIATION
				Date / Time Start	Date / Time End						
B036 - Reformer 3 Furnace	Yes	No	Continuous Monitoring System	No downtime or excess emissions during this reporting quarter.							

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 162 ppmv H₂S in fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 30050531960100

Date of Latest CMS Certification or Audit: 11/16/2021

Process Unit(s) Description: East Flare (0448020007P003)

Total Source Operating Time in Reporting Period²: 2,209 hr


Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	1
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	3
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	4
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.00	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.18
² Record all times in minutes.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature:  90F20640AD13450...

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - EAST FLARE H2S CMS REPORT FOR 4TH QUARTER 2021											
EMISSIONS UNIT ID/Description	Reporting Requirement (choose one or both)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)
	Quarterly	Semi- Annual		DEVIATION DURATION		DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
				Date / Time Start	Date / Time End						
P003 - East Flare	Yes	No	Continuous Monitoring System	10/5/2021 at 13:00 hours	10/5/2021 at 14:00 hours	CEMS downtime for 60 minutes	Sample line maintenance	Replaced the sample pump, recalibrated, and returned to service	No	No Reports	No Reports
P003 - East Flare	Yes	No	Continuous Monitoring System	11/16/2021 at 09:00 hours	11/16/2021 at 12:00 hours	CEMS downtime for 180 minutes	CGA Test Completed	Recalibrated and Returned Analyzer to service.	No	No Reports	No Reports

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: Total Sulfur

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: NA - Analyzer used to calculate SO₂ emissions

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Thermo Scientific SOLA II, SN: SL-10430115

Date of Latest CMS Certification or Audit: TS Low: 10/27/2021; TS High: 10/28/2021

Process Unit(s) Description: East Flare (0448020007P003)

Total Source Operating Time in Reporting Period²: 2,209 hr

Emission Data Summary		CEMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CEMS downtime in reporting period due to:	
a. Start-up/Shutdown:	NA	a. Monitor equipment malfunctions	0
b. Control equipment problems	NA	b. Non-monitor equipment malfunctions	0
c. Process Problems	NA	c. Quality assurance calibration	2
d. Other known causes	NA	d. Other known causes	0
e. Unknown causes	NA	e. Unknown causes	0
2. Total duration of excess emissions	NA	2. Total CEMS Downtime	2
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	NA	3. [Total CEMS Downtime] x (100) / [Total source operating time] % ³	0.09
² Record all times in minutes.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CEMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: DocuSigned by:
Des Gillen
90F20640AD13450...

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - EAST FLARE TS CMS REPORT FOR 4TH QUARTER 2021											
EMISSIONS UNIT ID/Description	Reporting Requirement (choose		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION		PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)	
	Quarterly	Semi- Annual		DEVIATION DURATION							DESCRIPTION AND MAGNITUDE OF THE DEVIATION
				Date / Time Start	Date / Time End						
P003 - East Flare	Yes	No	Continuous Monitoring System	10/27/2021 at 13:00 hours	10/27/2021 at 14:00 hours	CEMS downtime for 60 minutes	CGA Test Completed	Recalibrated and Returned Analyzer to service.	No	No Reports	No Reports
P003 - East Flare	Yes	No	Continuous Monitoring System	10/28/2021 at 10:00 hours	10/28/2021 at 11:00 hours	CEMS downtime for 60 minutes	CGA Test Completed	Recalibrated and Returned Analyzer to service.	No	No Reports	No Reports

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 162 ppmv H₂S in fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 30050531960400

Date of Latest CMS Certification or Audit: 11/17/2021

Process Unit(s) Description: West Flare Vent Gas (0448020007P004)

Total Source Operating Time in Reporting Period²: 2,209 hr

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	32
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	2
d. Other known causes	0	d. Other known causes	6
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	40
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.00	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	1.81
² Record all times in minutes.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 
DocuSigned by: 90F20640AD13450...

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: H₂S

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 162 ppmv H₂S in fuel gas on a 3-hr rolling average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Siemens Maxum II, SN: 009300

Date of Latest CMS Certification or Audit: 11/16/2021

Process Unit(s) Description: West Flare C Valve (0448020007P004)

Total Source Operating Time in Reporting Period²: 2,209 hr


Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	NA	a. Monitor equipment malfunctions	0
b. Control equipment problems	NA	b. Non-monitor equipment malfunctions	0
c. Process Problems	NA	c. Quality assurance calibration	0
d. Other known causes	NA	d. Other known causes	0
e. Unknown causes	NA	e. Unknown causes	0
2. Total duration of excess emissions	NA	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	NA ⁴	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.00
² Record all times in minutes.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			
⁴ Excess emissions are reported in the West Flare Vent Gas section, and are not included in this section to avoid double counting.			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature:  90F20840AD13450...

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - WEST FLARE H2S CMS REPORT FOR 4TH QUARTER 2021											
EMISSIONS UNIT ID/Description	Reporting Requirement (choose one or both)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)
	Quarterly	Semi-Annual		DEVIATION DURATION		DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
				Date / Time Start	Date / Time End						
P004 - West Flare	Yes	No	Continuous Monitoring System	10/4/2021 at 09:00 hours	10/4/2021 at 10:00 hours	CEMS downtime for 60 minutes	Sample line maintenance	Checked flow and gate times for cal gas and returned to service	No	No Reports	No Reports
P004 - West Flare	Yes	No	Continuous Monitoring System	11/9/2021 at 06:00 hours	11/10/2021 at 10:00 hours	CEMS out-of-control time for 1680 minutes	Analyzer Failed Daily Validation	Started troubleshooting sample flow, recalibrated for drift, and returned to service	No	No Reports	No Reports
P004 - West Flare	Yes	No	Continuous Monitoring System	11/10/2021 at 11:00 hours	11/10/2021 at 14:00 hours	CEMS downtime for 180 minutes	Repairs to sample valve	Techs found plugged tubing coming off the model 50 valve. Replaced model 50 sample valve.	No	No Reports	No Reports
P004 - West Flare	Yes	No	Continuous Monitoring System	11/11/2021 at 07:00 hours	11/11/2021 at 10:00 hours	CEMS downtime for 180 minutes	Sample System Maintenance	Checked sample system and analyzer prior to validation	No	No Reports	No Reports
P004 - West Flare	Yes	No	Continuous Monitoring System	11/16/2021 at 13:00 hours	11/16/2021 at 14:00 hours	CEMS downtime for 60 minutes	Maintenance Checks	Calibration gas checks	No	No Reports	No Reports
P004 - West Flare	Yes	No	Continuous Monitoring System	11/17/2021 at 09:00 hours	11/17/2021 at 11:00 hours	CEMS downtime for 120 minutes	Maintenance Checks	Calibration gas checks and single line calibrations	No	No Reports	No Reports
P004 - West Flare	Yes	No	Continuous Monitoring System	11/17/2021 at 13:00 hours	11/17/2021 at 15:00 hours	CEMS downtime for 120 minutes	CGA Test Completed	Recalibrated and Returned Analyzer to service.	No	No Reports	No Reports

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: Total Sulfur

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: NA - Analyzer used to calculate SO2 emissions

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Thermo Scientific SOLA II, SN: SL-10440115

Date of Latest CMS Certification or Audit: TS Low: 10/26/2021; TS High: 10/26/2021

Process Unit(s) Description: West Flare Vent Gas (0448020007P004)

Total Source Operating Time in Reporting Period²: 2,209 hr

Emission Data Summary		CEMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CEMS downtime in reporting period due to:	
a. Start-up/Shutdown:	NA	a. Monitor equipment malfunctions	0
b. Control equipment problems	NA	b. Non-monitor equipment malfunctions	0
c. Process Problems	NA	c. Quality assurance calibration	1
d. Other known causes	NA	d. Other known causes	6
e. Unknown causes	NA	e. Unknown causes	0
2. Total duration of excess emissions	NA	2. Total CEMS Downtime	7
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	NA	3. [Total CEMS Downtime] x (100) / [Total source operating time] % ³	0.32
² Record all times in minutes.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CEMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: Des Gillen
90F20640AD13450...

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT
GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: Total Sulfur

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: NA - Analyzer used to calculate SO₂ emissions

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Thermo Scientific SOLA II, SN: SL-09030713

Date of Latest CMS Certification or Audit: 11/2/2021

Process Unit(s) Description: West Flare C Valve (0448020007P004)

Total Source Operating Time in Reporting Period²: 2,209 hr

Emission Data Summary		CEMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CEMS downtime in reporting period due to:	
a. Start-up/Shutdown:	NA	a. Monitor equipment malfunctions	26
b. Control equipment problems	NA	b. Non-monitor equipment malfunctions	45
c. Process Problems	NA	c. Quality assurance calibration	0
d. Other known causes	NA	d. Other known causes	3
e. Unknown causes	NA	e. Unknown causes	0
2. Total duration of excess emissions	NA	2. Total CEMS Downtime	74
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	NA	3. [Total CEMS Downtime] x (100) / [Total source operating time] % ³	3.35
² Record all times in minutes.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CEMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CEMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - WEST FLARE TS CMS REPORT FOR 4TH QUARTER 2021											
EMISSIONS UNIT ID/Description	Reporting Requirement (choose		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)
	Quarterly	Semi- Annual		DEVIATION DURATION		DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
				Date / Time Start	Date / Time End						
P004 - West Flare	Yes	No	Continuous Monitoring System	10/26/2021 at 13:00 hours	10/26/2021 at 14:00 hours	CEMS downtime for 60 minutes	CGA Test Completed	Recalibrated and Returned Analyzer to service.	No	No Reports	No Reports
P004 - West Flare	Yes	No	Continuous Monitoring System	11/9/2021 at 09:00 hours	11/9/2021 at 10:00 hours	CEMS downtime for 60 minutes	Recalibrate for Drift	Recalibrated for drift and returned to service	No	No Reports	No Reports
P004 - West Flare	Yes	No	Continuous Monitoring System	11/12/2021 at 09:00 hours	11/12/2021 at 10:00 hours	CEMS downtime for 60 minutes	Recalibrate for Drift	Recalibrated for drift and returned to service	No	No Reports	No Reports
P004 - West Flare	Yes	No	Continuous Monitoring System	12/1/2021 at 10:00 hours	12/1/2021 at 14:00 hours	CEMS downtime for 240 minutes	Semi-annual PM	Sample valve and leak check PM.	No	No Reports	No Reports

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: NO_x

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 40 ppm_{v,d} (30-day rolling average)

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS O2

Date of Latest CEMS Certification or Audit: 11/19/2021

Process Unit(s) Description: Reformer 3 Furnace (0448020007B036)

Total Source Operating Time in Reporting Period²: 2,209 hr

Emission Data Summary		CEMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CEMS downtime in reporting period due to:	
a. Start-up/Shutdown	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	1
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CEMS Downtime	1
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0.00	3. [Total CEMS Downtime] x (100) / [Total source operating time] % ³	0.05
² Record all times in minutes.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CEMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - REFORMER 3 FURNACE NOx CEMS REPORT FOR 4TH QUARTER 2021											
EMISSIONS UNIT ID/Description	Reporting Requirement (choose one or both)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)
	Quarterly	Semi- Annual		DEVIATION DURATION		DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
				Date / Time Start	Date / Time End						
B036 - Reformer 3 Furnace	Yes	No	Continuous Emission Monitoring System (CEMS)	12/16/2021 at 13:00 hours	12/16/2021 at 14:00 hours	CEMS downtime for 60 minutes	Recalibrate for Drift	Recalibrated and Returned Analyzer to service.	No	No Reports	No Reports

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: CO

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 500 ppmv CO, db, 1-hr average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB URAS 14, SN: 3.240684.3

Date of Latest CEMS Certification or Audit: 11/10/2021

Process Unit(s) Description: FCCU/CO Boiler Bypass, 0448020007P007

Total Source Operating Time in Reporting Period²: 0 hr


Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.00
<small>2 Record all times in hours. hours of operation are defined as when FCCU feed was in the unit and the CO Boiler bypass stack was in service.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - FCC REGEN VENT CO CEMS REPORT 4TH QUARTER 2021											
EMISSIONS UNIT ID/Description	Reporting Requirement (choose one or both)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "No Reports" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "No Reports" in the space below)
	Quarterly	Semi- Annual		DEVIATION DURATION		DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
				Date / Time Start	Date / Time End						
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	Bypass Stack not in operation during the quarter, therefore no excess emissions or part 60 CEMS downtime to report.							

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: NO_x

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 58.1 ppmv NO_x db @ 0% O₂ (365-day rolling avg)

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS O₂, SN: 3.240682.3

Date of Latest CEMS Certification or Audit: 11/10/2021

Process Unit(s) Description: FCCU/CO Boiler Bypass, 0448020007P007

Total Source Operating Time in Reporting Period²: 0 hr

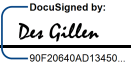
Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.00
<small>2 Record all times in hours. hours of operation are defined as when FCCU feed was in the unit and the CO Boiler bypass stack was in service.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature:  90F20640AD13450...

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: NOx

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 93.4 ppmv NOx db @ 0% O2 (7-day rolling avg)

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS O2, SN: 3.240682.3

Date of Latest CEMS Certification or Audit: 11/10/2021

Process Unit(s) Description: FCCU/CO Boiler Bypass, 0448020007P007

Total Source Operating Time in Reporting Period²: 0 hr

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.00

² Record all times in hours. hours of operation are defined as when FCCU feed was in the unit and the CO Boiler bypass stack was in service.


³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature:  Des Gillen
DocuSigned by:
90F20640AD13450...

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - FCC REGEN VENT NOx CEMS REPORT 4TH QUARTER 2021											
EMISSIONS UNIT ID/Description	Reporting Requirement (choose one or both)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "No Reports" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "No Reports" in the space below)
	Quarterly	Semi-Annual		DEVIATION DURATION		DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
				Date / Time Start	Date / Time End						
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	Bypass Stack not in operation during the quarter, therefore no excess emissions or part 60 CEMS downtime to report.							

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: SO₂

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 260 ppmvd SO₂ at 0% excess O₂ as a rolling 7-day average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS O₂, SN: 3.240685.3

Date of Latest CEMS Certification or Audit: 11/10/2021

Process Unit(s) Description: FCCU/CO Boiler Bypass, 0448020007P007

Total Source Operating Time in Reporting Period²: 0 hr

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CEMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CEMS Downtime] x (100) / [Total source operating time] % ³	0.00
² Record all times in hours. hours of operation are defined as when FCCU feed was in the unit and the CO Boiler bypass stack was in service.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent of greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: SO₂

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 160 ppmvd SO₂ at 0% excess O₂ as a rolling 365-day average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS O₂, SN: 3.240685.3

Date of Latest CEMS Certification or Audit: 11/10/2021

Process Unit(s) Description: FCCU/CO Boiler Bypass, 0448020007P007

Total Source Operating Time in Reporting Period²: 0 hr

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.00
² Record all times in hours. hours of operation are defined as when FCCU feed was in the unit and the CO Boiler bypass stack was in service.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: DocuSigned by:
Des Gillen
90F20640AD13450...

Title: President - BP-Husky Refining LLC
1/31/2022

Date: _____

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: SO₂

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 1,020 tons SO2 per rolling 12-month period

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS O2, SN: 3.240685.3

Date of Latest CEMS Certification or Audit: 11/10/2021

Process Unit(s) Description: FCCU/CO Boiler Bypass, 0448020007P007

Total Source Operating Time in Reporting Period²: 0 hr

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.00
<small>2 Record all times in hours. hours of operation are defined as when FCCU feed was in the unit and the CO Boiler bypass stack was in service.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: SO₂

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.92 lb SO₂ per 1000 lb of fresh feed

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS O₂, SN: 3.240685.3

Date of Latest CEMS Certification or Audit: 11/10/2021

Process Unit(s) Description: FCCU/CO Boiler Bypass, 0448020007P007

Total Source Operating Time in Reporting Period²: 0 hr

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CMS Downtime	0
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.00
<small>2 Record all times in hours. hours of operation are defined as when FCCU feed was in the unit and the CO Boiler bypass stack was in service.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - FCC REGEN VENT SO2 CEMS REPORT 4TH QUARTER 2021											
EMISSIONS UNIT ID/Description	Reporting Requirement (choose one or both)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION		PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "No Reports" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "No Reports" in the space below)	
	Quarterly	Semi- Annual		DEVIATION DURATION							DESCRIPTION AND MAGNITUDE OF THE DEVIATION
				Date / Time Start	Date / Time End						
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	Bypass Stack not in operation during the quarter, therefore no excess emissions or part 60 CEMS downtime to report.							

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: CO

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 500 ppmv CO, db, 1-hr average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB URAS 26, SN: 3.347698.3

Date of Latest CEMS Certification or Audit: 11/18/2021

Process Unit(s) Description: CO Boiler Exhaust, including FCC Regen Flue Gas, 0448020007P007

Total Source Operating Time in Reporting Period²: 2,209 hr


Emission Data Summary		CEMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CEMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	7
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	2
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CEMS Downtime	9
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. Total CEMS Downtime] x (100) / [Total source operating time] % ³	0.41
² Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature:  90F20640AD13450...

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - FCC/CO BOILER CO CEMS REPORT 4TH QUARTER 2021

EMISSIONS UNIT ID/Description	Reporting Requirement (choose)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "No Reports" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "No Reports" in the space below)
	Quarterly	Semi- Annual		DEVIATION DURATION		DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
				Date / Time Start	Date / Time End						
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	10/3/2021 at 03:00 hours	10/3/2021 at 10:00:00 AM	CEMS downtime for 420 minutes	Sample Line Maintenance	Replaced the sample line cooler, recalibrated, and returned to service	No	No Reports	No Reports
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	11/18/2021 at 10:00 hours	11/18/2021 at 12:00 hours	CEMS downtime for 120 minutes	CGA Test Completed	Recalibrated and Returned Analyzer to service.	No	No Reports	No Reports

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: NOx

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 93.4 ppmv NOx db @ 0% O2 (7-day rolling avg)

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS 106, SN: 3.340641.7

Date of Latest CEMS Certification or Audit: 11/18/2021

Process Unit(s) Description: CO Boiler Exhaust, including FCC Regen Flue Gas, 0448020007P007

Total Source Operating Time in Reporting Period²: 2,209 hr

Emission Data Summary		CEMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CEMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	7
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	2
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CEMS Downtime	9
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CEMS Downtime] x (100) / [Total source operating time] % ³	0.41
<small>² Record all times in hours.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: NOx

Reporting Period Dates: From: October 1, 2021 To: January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 58.1 ppmv NOx db @ 0% O2 (365-day rolling avg)

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS 106, SN: 3.340641.7

Date of Latest CEMS Certification or Audit: 11/18/2021

Process Unit(s) Description: CO Boiler Exhaust, including FCC Regen Flue Gas, 0448020007P007

Total Source Operating Time in Reporting Period²: 2,209 hr


Emission Data Summary		CEMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CEMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	7
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	2
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CEMS Downtime	9
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CEMS Downtime] x (100) / [Total source operating time] % ³	0.41
<small>² Record all times in hours.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - FCC/CO BOILER NOx CEMS REPORT 4TH QUARTER 2021											
EMISSIONS UNIT ID/Description	Reporting Requirement (choose		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "No Reports" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "No Reports" in the space below)
	Quarterly	Semi- Annual		DEVIATION DURATION		DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
				Date / Time Start	Date / Time End						
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	10/3/2021 at 03:00 hours	10/3/2021 at 10:00 hours	CEMS downtime for 420 minutes	Sample Line Maintenance	Replaced the sample line cooler, recalibrated, and returned to service	No	No Reports	No Reports
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	11/18/2021 at 10:00 hours	11/18/2021 at 12:00 hours	CEMS downtime for 120 minutes	CGA Test Completed	Recalibrated and Returned Analyzer to service.	No	No Reports	No Reports

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: SO₂

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 260 ppmvd SO₂ at 0% excess O₂ as a rolling 7-day average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS 106, SN: 3.340641.7

Date of Latest CEMS Certification or Audit: 11/18/2021

Process Unit(s) Description: CO Boiler Exhaust, including FCC Regen Flue Gas, 0448020007P007

Total Source Operating Time in Reporting Period²: 2,209 hr

Emission Data Summary		CEMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CEMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	7
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	2
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CEMS Downtime	9
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CEMS Downtime] x (100) / [Total source operating time] % ³	0.41
<small>² Record all times in hours.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: Des Gillen
DocuSigned by:
90F20640AD13450...

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: SO₂

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 160 ppmvd SO₂ at 0% excess O₂ as a rolling 365-day average

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS 106, SN: 3.340641.7

Date of Latest CEMS Certification or Audit: 11/18/2021

Process Unit(s) Description: CO Boiler Exhaust, including FCC Regen Flue Gas, 0448020007P007

Total Source Operating Time in Reporting Period²: 2,209 hr

Emission Data Summary		CEMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CEMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	7
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	2
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CEMS Downtime	9
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CEMS Downtime] x (100) / [Total source operating time] % ³	0.41
² Record all times in hours.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: Des Gillen

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: SO₂

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 1,020 tons SO₂ per rolling 12-month period

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS 106, SN: 3.340641.7

Date of Latest CEMS Certification or Audit: 11/18/2021

Process Unit(s) Description: CO Boiler Exhaust, including FCC Regen Flue Gas, 0448020007P007

Total Source Operating Time in Reporting Period²: 2,209 hr


Emission Data Summary		CEMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CEMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	7
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	2
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CEMS Downtime	9
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CEMS Downtime] x (100) / [Total source operating time] % ³	0.41
<small>² Record all times in hours.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature:  Des Gillen
90F20640AD13450...

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: SO₂

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 0.92 lb SO₂ per 1000 lb of fresh feed

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS 106, SN: 3.340641.7

Date of Latest CEMS Certification or Audit: 11/18/2021

Process Unit(s) Description: CO Boiler Exhaust, including FCC Regen Flue Gas, 0448020007P007

Total Source Operating Time in Reporting Period²: 2,209 hr

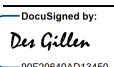
Emission Data Summary		CEMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CEMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	7
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	2
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CEMS Downtime	9
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CEMS Downtime] x (100) / [Total source operating time] % ³	0.41
<small>² Record all times in hours.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			

Describe any changes since last quarter in CEMS, process, or controls.

Not Applicable - No changes since the previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature:  Des Gillen
00220840AD13450

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - FCC/CO BOILER SO2 CEMS REPORT 4TH QUARTER 2021											
EMISSIONS UNIT ID/Description	Reporting Requirement (choose		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "No Reports" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "No Reports" in the space below)
	Quarterly	Semi- Annual		DEVIATION DURATION		DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
				Date / Time Start	Date / Time End						
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	10/3/2021 at 03:00 hours	10/3/2021 at 10:00 hours	CEMS downtime for 420 minutes	Sample Line Maintenance	Replaced the sample line cooler, recalibrated, and returned to service	No	No Reports	No Reports
P007 - FCCU / CO Boiler Bypass Stack	Yes	No	Continuous Emissions Monitoring System (CEMS)	11/18/2021 at 10:00 hours	11/18/2021 at 12:00 hours	CEMS downtime for 120 minutes	CGA Test Completed	Recalibrated and Returned Analyzer to service.	No	No Reports	No Reports

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: SO₂

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 250 ppm SO₂ dry, 0% excess O₂ (12-hour average)

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Ametek Model 919, SN: ZB-919SP-10541-1

Date of Latest CEMS Certification or Audit: 11/1/2021

Process Unit(s) Description: #1 Claus Sulfur Recovery Unit with SCOT Unit (0448020007P009)

Total Source Operating Time in Reporting Period²: 2,209 hr

Emission Data Summary		CEMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CEMS downtime in reporting period due to:	
a. Start-up/Shutdown ⁴ :	63	a. Monitor equipment malfunctions	1
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	10
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	63	2. Total CEMS Downtime	11
3. Total duration of excess emissions x (100) / [Total source operating time] % ^{3,4}	2.85	3. [Total CEMS Downtime] x (100) / [Total source operating time] % ³	0.50
² Record all times in minutes.			
³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.			
⁴ For the reporting period: This is not a deviation of 40 CFR 60 Subpart J standard pursuant to 40 CFR 60.8(c), which states: emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.			

Describe any changes since last quarter in CEMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC SRU #1 SO2 CEMS REPORT FOR 4TH QUARTER 2021

EMISSIONS UNIT ID/Description	Reporting Requirement (choose one or both)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION		PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)	
	Quarterly	Semi- Annual		DEVIATION DURATION							DESCRIPTION AND MAGNITUDE OF THE DEVIATION
				Date / Time Start	Date / Time End						
P009 - Sulfur Recovery Unit #1	Yes	No	Continuous Emission Monitoring System (CEMS)	10/12/2021 at 00:00 hours	10/14/2021 at 2:00:00 PM	CEMS excess emissions for 3780 minutes	The Sulfur Recovery Unit #1 was in the process of going into a shutdown mode when excess emissions occurred. This is not a deviation of 40 CFR 60 Subpart J standard pursuant to 40 CFR 60.8(c), which states: emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.	Not Applicable	No	No Reports	No Reports
P009 - Sulfur Recovery Unit #1	Yes	No	Continuous Emission Monitoring System (CEMS)	10/21/2021 at 13:00 hours	10/21/2021 at 14:00 hours	CEMS downtime for 60 minutes	Sample Line Maintenance	Steamed sample select valve due to low sample flow	No	No Reports	No Reports
P009 - Sulfur Recovery Unit #1	Yes	No	Continuous Emission Monitoring System (CEMS)	11/29/2021 at 10:00 hours	11/29/2021 at 15:00 hours	CEMS downtime for 300 minutes	Semi-annual PM	Semi-Annual PM on the sample cell	No	No Reports	No Reports
P009 - Sulfur Recovery Unit #1	Yes	No	Continuous Emission Monitoring System (CEMS)	12/3/2021 at 09:00 hours	12/3/2021 at 13:00 hours	CEMS downtime for 240 minutes	Quarterly PM	Steamed sample line, purged with nitrogen, recalibrated and returned to service	No	No Reports	No Reports
P009 - Sulfur Recovery Unit #1	Yes	No	Continuous Emission Monitoring System (CEMS)	12/16/2021 at 09:00 hours	12/16/2021 at 10:00 hours	CEMS downtime for 60 minutes	Recalibrate for Drift	Recalibrated and Returned Analyzer to service.	No	No Reports	No Reports

Excess Emission and Monitoring System Performance Report #1 Claus Sulfur Recovery Unit CEMS Report (Source # P009) 4Q 2021

In accordance with the applicable PTIs for this source, written reports of excess emissions shall include the following information:

1. The magnitude of excess emissions computed in accordance with §60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.

#1 Claus Sulfur Recovery Unit operated for a total of 2209 hours in 4Q. There was one period of excess emissions for this CEMS while the unit was going into a shutdown mode. Total excess emissions from this period exceeded 250 ppm SO₂ on a rolling 12 hour basis.

- Start time: 10/12/2021 at 00:00
End time: 10/14/2021 14:00
Duration: 63 hours

This is not a deviation of 40 CFR 60 Subpart J standard pursuant to 40 CFR 60.8(c), which states: emission limit during periods of start-up, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.

2. Specific identification of each period of excess emissions that occurs during start-ups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

There was one period of excess emissions for this CEMS associated with a planned start-up and shutdown and it is listed below. Normal start-up/shutdown procedures were followed.

- Start time: 10/12/2021 at 00:00
End time: 10/14/2021 14:00
Duration: 63 hours

This is not a deviation of 40 CFR 60 Subpart J standard pursuant to 40 CFR 60.8(c), which states: emission limit during periods of start-up, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.

Excess Emission and Monitoring System Performance Report

#1 Claus Sulfur Recovery Unit CEMS Report (Source # P009)

4Q 2021

3. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

There was four periods of CEMS downtime for the quarter while the source was in operation and it is listed below:

- Start time: 10/21/2021 13:00
End time: 10/21/2021 14:00
Duration: 1 hours

This period of downtime was due to sample line maintenance. The select valve was cleared and was recalibrated and returned to service.

- Start time: 11/29/2021 10:00
End time: 11/29/2021 15:00
Duration: 5 hours

This period of downtime was due to semi-annual preventative maintenance on the sample cell.

- Start time: 12/3/2021 09:00
End time: 12/3/2021 13:00
Duration: 4 hours

This period of downtime was due to quarterly preventative maintenance on the sample system.

- Start time: 12/16/2021 09:00
End time: 12/16/2021 10:00
Duration: 1 hour

This period of downtime was due system checks on the sample system for drift. It was recalibrated and returned to service.

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: SO₂

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Emission Limitation: 250 ppm SO₂ dry, 0% excess O₂ (12-hour average)

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: Ametek Model 919 and WDG-V, SN: ZX-919-10814-1

Date of Latest CEMS Certification or Audit: 11/1/2021

Process Unit(s) Description: Sulfur Recovery Units # 2 & #3 with TGT #2 (0448020007P037)

Total Source Operating Time in Reporting Period²: 2,209 hr


Emission Data Summary		CEMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CEMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	23	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	6
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	23	2. Total CEMS Downtime	6
3. Total duration of excess emissions x (100) / [Total source operating time] % ^{3,4}	1.04	3. [Total CEMS Downtime] x (100) / [Total source operating time] % ³	0.27
<small>² Record all times in hours.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5 percent or greater of the total operating time, both the summary report form and the excess emission report shall be submitted.</small>			
<small>⁴ For the reporting period: This is not a deviation of 40 CFR 60 Subpart J standard pursuant to 40 CFR 60.8(c), which states: emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.</small>			

Describe any changes since last quarter in CEMS, process, or controls.

Not applicable - no changes from previous quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature:  Des Gillen

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC SRU #2 & SRU #3 SO2 CEMS REPORT FOR 4TH QUARTER 2021											
EMISSIONS UNIT ID / Description	Reporting Requirement (choose one or both)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "No Reports" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "No Reports" in the space below)
	Quarterly	Semi- Annual		DEVIATION DURATION		DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
				Date / Time Start	Date / Time End						
P037 - Sulfur Recovery Units #2 & #3	Yes	No	Continuous Emission Monitoring System (CEMS)	10/14/2021 at 05:00 hours	10/14/2021 at 4:00:00 PM	CEMS excess emissions for 660 minutes	Coker 3 Restart -This is not a deviation of 40 CFR 60 Subpart J standard pursuant to 40 CFR 60.8(c), which states: emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.	Coker 3 gas plant was restarted and resulted in an excess of acid gas in the system. Operations slowed down the generation of acid gas.	Yes	No Reports	No Reports
P037 - Sulfur Recovery Units #2 & #3	Yes	No	Continuous Emission Monitoring System (CEMS)	11/30/2021 at 08:00 hours	11/30/2021 at 14:00 hours	CEMS downtime for 360 minutes	Semi-annual PM	Semi-Annual PM on the sample cell	No	No Reports	No Reports
P037 - Sulfur Recovery Units #2 & #3	Yes	No	Continuous Emission Monitoring System (CEMS)	12/11/2021 at 03:00 hours	12/11/2021 at 15:00 hours	CEMS excess emissions for 720 minutes	A third party acid gas receiver shutdown and resulted in an excess of acid gas at the Sulfur Recovery Units resulting in excess emissions of SO2 - This is not a deviation of 40 CFR 60 Subpart J standard pursuant to 40 CFR 60.8(c), which states: emission limit during periods of startup, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.	Process adjustments were made to reduce acid gas volume until the third party receiver could be restarted.	Yes	12/11/2021	12/11/2021

Excess Emission and Monitoring System Performance Report #2 and 3 Claus Sulfur Recovery Unit CEMS Report (Source # P037) 4Q 2021

In accordance with the applicable PTIs for this source, written reports of excess emissions shall include the following information:

1. The magnitude of excess emissions computed in accordance with §60.13(h), any conversion factor(s) used, and the date and time of commencement and completion of each time period of excess emissions. The process operating time during the reporting period.

#2 and 3 Sulfur Recovery Units operated for a total of 2209 hours in 4Q. There were two periods of excess emissions for this CEMS. Total excess emissions from these periods exceeded 250 ppm SO₂ on a rolling 12 hour basis.

- Start time: 10/14/2021 at 05:00
End time: 10/14/2021 16:00
Duration: 11 hours

This period of excess emissions was due to the Coker 3 Unit restart. This is not a deviation of 40 CFR 60 Subpart J standard pursuant to 40 CFR 60.8(c), which states: emission limit during periods of start-up, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.

- Start time: 12/11/2021 at 03:00
End time: 12/11/2021 15:00
Duration: 12 hours

This period of excess emissions was due to a third-party acid gas receiver shutting down. This is not a deviation of 40 CFR 60 Subpart J standard pursuant to 40 CFR 60.8(c), which states: emission limit during periods of start-up, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.

2. Specific identification of each period of excess emissions that occurs during start-ups, shutdowns, and malfunctions of the affected facility. The nature and cause of any malfunction (if known), the corrective action taken or preventative measures adopted.

#2 and 3 Sulfur Recovery Units operated for a total of 2209 hours in 4Q. There were two periods of excess emissions for this CEMS associated with start-ups, shutdowns, and malfunctions.

- Start time: 10/14/2021 at 05:00
End time: 10/14/2021 16:00
Duration: 11 hours

Excess Emission and Monitoring System Performance Report #2 and 3 Claus Sulfur Recovery Unit CEMS Report (Source # P037) 4Q 2021

This period of excess emissions was due to the Coker 3 Unit restart. This is not a deviation of 40 CFR 60 Subpart J standard pursuant to 40 CFR 60.8(c), which states: emission limit during periods of start-up, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.

- Start time: 12/11/2021 at 03:00
End time: 12/11/2021 15:00
Duration: 12 hours

This period of excess emissions was due to a third-party acid gas receiver shutting down. This is not a deviation of 40 CFR 60 Subpart J standard pursuant to 40 CFR 60.8(c), which states: emission limit during periods of start-up, shutdown, and malfunction be considered a violation of the applicable emission limit unless otherwise specified in the applicable standard.

3. The date and time identifying each period during which the continuous monitoring system was inoperative except for zero and span checks and the nature of the system repairs or adjustments.

There was one period of CEMS downtime for the quarter while the source was in operation and it is listed below:

- Start time: 11/30/2021 08:00
End time: 11/30/2021 14:00
Duration: 6 hours

This period of downtime was due to semi-annual preventative maintenance on the sample cell. The CEMS was calibrated and returned to service.

Additional Information Required under PTI # 04-1046

- 1. Total SO₂ emissions during calendar quarter (in tons), including any excess emissions attributed to the malfunction, startup, or shutdown of emissions unit P037. (ST&C III.A.iii)**

Total SO₂ emissions from the TRP SRUs during the period October 1, 2021 through December 31, 2021 were calculated at 10.9 tons.

- 2. Total operating time of the CEMS while either SRU was online. (ST&C III.A.iii)**

During the quarter, the total source operating time while either or both SRUs were in service was 2,209 hours. The CEMS was online and monitoring for 2,203 hours while either SRU was in service.

During the quarter, there were no periods of CEMS out-of-control time and one (1) period of CEMS downtime for a total duration of 2 hours. Details of this event are summarized in the table attached.

- 3. Quantification of emissions routed from the SRU to the flare beginning with activation of the relief valve until the release is over. (ST&C VII.A)**

There were no periods during the 4th quarter when acid gas was sent to the TRP Acid Gas flare.

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: NO_x

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS O2

Monitor Location: Sample port on East Alstom Boiler Stack; monitor housed at ground level in an analyzer building adjacent the boiler.

Date of Latest CMS Cert or Audit: 12/22/2021

Process Unit(s) Description: East Alstom Boiler (0448020007B034)

Total Source Operating Time in Reporting Period: 2,209 hr (TIU fuel gas was combusted for 0 hours and natural gas was combusted for 2,209 hours for a total of 2,209 hours this quarter)

CMS operating time while emission unit was in operation: 2,208 hr

Emission Limitation: 12.71 lb/hr of NO_x emissions;
38.5 tons/rolling 12-month period of NO_x emissions (combined B034 & B035);
0.10 lb NO_x (as NO₂) per mmBtu heat input 30-day rolling average


Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	0
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	1
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CEMS Downtime	1
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.05
<small>² Record all times in hours.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5</small>			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - No changes since last quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: 

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - EAST ALSTOM BOILER NOx CEMS REPORT FOR 4TH QUARTER 2021

EMISSIONS UNIT ID/Description	Reporting Requirement (choose one or both)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)
	Quarterly	Semi- Annual		DEVIATION DURATION		DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
				Date / Time Start	Date / Time End						
B034 - East Alstom Boiler	Yes	No	Continuous Monitoring System	11/12/2021 at 13:00 hours	11/12/2021 at 14:00 hours	CEMS downtime for 60 minutes	CGA Test Completed	Recalibrated and Returned Analyzer to service.	No	No Reports	No Reports

East Alstom Boiler - 4th Quarter 2021 Db Data

NSPS Db: Supplemental Reporting for NO_x CEM Records as required by 40 CFR 49b(i)

This table contains the information required by 60.49(g)(1-8).

Records for (g)(9-10) are provided in the NSPS Quarterly CEMS Report.

East Alstom Boiler (B034): 353 MMBtu/hr heater fired with refinery fuel gas and/or natural gas

Calculation Methodology: NO_x emissions (lb/MMBtu) calculated from NO_x CEM (ppm) using Methodology in 40 CFR 60 Appendix A Method 19 and F factor of 8710 dscf/MMBtu from Method 19 Table 19-1 when natural gas fired; site-specific F factor determined from fuel analysis when refinery fuel gas fired.

NSPS Limit: 0.10 lb NO_x/MMBtu

Date	Hourly daily average NO _x (lb/MMBtu)	30-day rolling average NO _x (lb/MMBtu)	Excess Emissions (yes/no)	NO _x Conc Exceeded CEM Span? (yes/no)	Comments: Reason for Missing or Invalid Data, or Excess Emissions
10/1/2021	0.024	0.023	No	No	
10/2/2021	0.024	0.023	No	No	
10/3/2021	0.024	0.023	No	No	
10/4/2021	0.024	0.023	No	No	
10/5/2021	0.023	0.023	No	No	
10/6/2021	0.025	0.023	No	No	
10/7/2021	0.026	0.024	No	No	
10/8/2021	0.025	0.024	No	No	
10/9/2021	0.024	0.024	No	No	
10/10/2021	0.030	0.024	No	No	
10/11/2021	0.027	0.024	No	No	
10/12/2021	0.027	0.024	No	No	
10/13/2021	0.028	0.025	No	No	
10/14/2021	0.022	0.024	No	No	
10/15/2021	0.024	0.025	No	No	
10/16/2021	0.024	0.025	No	No	
10/17/2021	0.026	0.025	No	No	
10/18/2021	0.027	0.025	No	No	
10/19/2021	0.027	0.025	No	No	
10/20/2021	0.025	0.025	No	No	
10/21/2021	0.025	0.026	No	No	
10/22/2021	0.027	0.026	No	No	
10/23/2021	0.028	0.026	No	No	
10/24/2021	0.029	0.026	No	No	
10/25/2021	0.029	0.026	No	No	
10/26/2021	0.027	0.026	No	No	
10/27/2021	0.025	0.026	No	No	
10/28/2021	0.028	0.026	No	No	
10/29/2021	0.027	0.026	No	No	
10/30/2021	0.027	0.026	No	No	
10/31/2021	0.024	0.026	No	No	
11/1/2021	0.026	0.026	No	No	
11/2/2021	0.028	0.026	No	No	
11/3/2021	0.029	0.026	No	No	
11/4/2021	0.030	0.027	No	No	
11/5/2021	0.030	0.027	No	No	
11/6/2021	0.026	0.027	No	No	
11/7/2021	0.023	0.027	No	No	
11/8/2021	0.023	0.027	No	No	
11/9/2021	0.022	0.026	No	No	
11/10/2021	0.027	0.026	No	No	
11/11/2021	0.023	0.026	No	No	
11/12/2021	0.024	0.026	No	No	
11/13/2021	0.025	0.026	No	No	
11/14/2021	0.025	0.026	No	No	
11/15/2021	0.025	0.026	No	No	
11/16/2021	0.026	0.026	No	No	
11/17/2021	0.024	0.026	No	No	
11/18/2021	0.029	0.026	No	No	
11/19/2021	0.030	0.026	No	No	
11/20/2021	0.029	0.027	No	No	
11/21/2021	0.029	0.027	No	No	
11/22/2021	0.030	0.027	No	No	
11/23/2021	0.031	0.027	No	No	
11/24/2021	0.026	0.027	No	No	
11/25/2021	0.020	0.026	No	No	

Date	Hourly daily average NOx (lb/MMBtu)	30-day rolling average NOx (lb/MMBtu)	Excess Emissions (yes/no)	NOx Conc Exceeded CEM Span? (yes/no)	Comments: Reason for Missing or Invalid Data, or Excess Emissions
11/26/2021	0.020	0.026	No	No	
11/27/2021	0.020	0.026	No	No	
11/28/2021	0.019	0.026	No	No	
11/29/2021	0.020	0.026	No	No	
11/30/2021	0.020	0.025	No	No	
12/1/2021	0.020	0.025	No	No	
12/2/2021	0.019	0.025	No	No	
12/3/2021	0.020	0.025	No	No	
12/4/2021	0.022	0.024	No	No	
12/5/2021	0.021	0.024	No	No	
12/6/2021	0.022	0.024	No	No	
12/7/2021	0.026	0.024	No	No	
12/8/2021	0.033	0.024	No	No	
12/9/2021	0.035	0.025	No	No	
12/10/2021	0.033	0.025	No	No	
12/11/2021	0.024	0.025	No	No	
12/12/2021	0.023	0.025	No	No	
12/13/2021	0.024	0.025	No	No	
12/14/2021	0.021	0.025	No	No	
12/15/2021	0.019	0.025	No	No	
12/16/2021	0.020	0.024	No	No	
12/17/2021	0.024	0.024	No	No	
12/18/2021	0.025	0.024	No	No	
12/19/2021	0.025	0.024	No	No	
12/20/2021	0.025	0.024	No	No	
12/21/2021	0.027	0.024	No	No	
12/22/2021	0.024	0.024	No	No	
12/23/2021	0.023	0.023	No	No	
12/24/2021	0.022	0.023	No	No	
12/25/2021	0.021	0.023	No	No	
12/26/2021	0.022	0.023	No	No	
12/27/2021	0.022	0.023	No	No	
12/28/2021	0.022	0.024	No	No	
12/29/2021	0.022	0.024	No	No	
12/30/2021	0.023	0.024	No	No	
12/31/2021	0.022	0.024	No	No	

FIGURE 1 - SUMMARY REPORT

GASEOUS AND OPACITY EXCESS EMISSION AND MONITORING SYSTEM PERFORMANCE¹

Pollutant: NO_x

Reporting Period Dates: **From:** October 1, 2021 **To:** January 1, 2022

Company: BP-Husky Refining LLC

Address: 4001 Cedar Point Road, Oregon, Ohio 43616

Monitor Manufacturer and Model No.: ABB LIMAS 11UV and ABB MAGNOS O2

Monitor Location: Sample port on West Alstom Boiler Stack; monitor housed at ground level in an analyzer building adjacent the boiler.

Date of Latest CMS Certification or Audit: 12/22/2021

Process Unit(s) Description: West Alstom Boiler (0448020007B035)

Total Source Operating Time in Reporting Period: 2,209 hr (TIU fuel gas was combusted for 2,209 hours and natural gas was combusted for 0 hours for a total of 2,209 hours this quarter)

CMS operating time while emission unit was in operation: 2,200 hr

Emission Limitation: 12.71 lb/hr of NO_x emissions;
38.5 tons/rolling 12-month period of NO_x emissions (combined B034 & B035);
0.10 lb NO_x (as NO₂) per mmBtu heat input 30-day rolling average

Emission Data Summary		CMS Performance Summary	
1. Duration of excess emissions in reporting period due to:		1. CMS downtime in reporting period due to:	
a. Start-up/Shutdown:	0	a. Monitor equipment malfunctions	9
b. Control equipment problems	0	b. Non-monitor equipment malfunctions	0
c. Process Problems	0	c. Quality assurance calibration	0
d. Other known causes	0	d. Other known causes	0
e. Unknown causes	0	e. Unknown causes	0
2. Total duration of excess emissions	0	2. Total CEMS Downtime	9
3. Total duration of excess emissions x (100) / [Total source operating time] % ³	0	3. [Total CMS Downtime] x (100) / [Total source operating time] % ³	0.41
<small>² Record all times in hours.</small>			
<small>³ For the reporting period: If the total duration of excess emissions is 1 percent or greater of the total operating time or the total CMS downtime is 5</small>			

Describe any changes since last quarter in CMS, process, or controls.

Not applicable - No changes since last quarter.

I certify that the information contained in this report is true, accurate, and complete.

Name: Des Gillen

Signature: Des Gillen
DocuSigned by:
90F20640AD13450...

Title: President - BP-Husky Refining LLC

Date: 1/31/2022

¹ Form described in 40 CFR 60.7 (d)

BP-HUSKY REFINING LLC - WEST ALSTOM BOILER NOx CEMS REPORT FOR 4TH QUARTER 2021											
EMISSIONS UNIT ID/Description	Reporting Requirement (choose one or both)		ACTUAL METHOD USED TO DETERMINE COMPLIANCE	DEVIATION INFORMATION			PROBABLE CAUSE FOR THE DEVIATION	CORRECTIVE ACTIONS / PREVENTATIVE MEASURES TAKEN	WAS DEVIATION ATTRIBUTABLE TO A MALFUNCTION? (Yes or No - If Yes, continue to the next column)	MALFUNCTION VERBAL REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)	MALFUNCTION WRITTEN REPORT DATE (If no reports were made, state "NO REPORTS" in the space below)
	Quarterly	Semi- Annual		DEVIATION DURATION		DESCRIPTION AND MAGNITUDE OF THE DEVIATION					
				Date / Time Start	Date / Time End						
B035 - West Alstom Boiler	Yes	No	Continuous Monitoring System	12/21/2021 at 13:00 hours	12/21/2021 at 22:00 hours	CEMS downtime for 540 minutes	Lamp and Ribbon Cable Replacement	Lamp Voltage was low on Limas Analyzer. Upon analyzer start up following the replacement, the ribbon cable had to be replaced	No	No Reports	No Reports

West Alstom Boiler - 4th Quarter 2021 Db Data

NSPS Db: Supplemental Reporting for NO_x CEM Records as required by 40 CFR 49b(i)

This table contains the information required by 60.49(g)(1-8).

Records for (g)(9-10) are provided in the NSPS Quarterly CEMS Report.

West Alstom Boiler (B035): 353 MMBtu/hr heater fired with refinery fuel gas and/or natural gas

Calculation Methodology: NO_x emissions (lb/MMBtu) calculated from NO_x CEM (ppm) using Methodology in 40 CFR 60 Appendix A Method 19 and F factor of 8710 dscf/MMBtu from Method 19 Table 19-1 when natural gas fired; site-specific F factor determined from fuel analysis when refinery fuel gas fired.

NSPS Limit: 0.10 lb NO_x/MMBtu

Date	Hourly daily average NO _x (lb/MMBtu)	30-day rolling average NO _x (lb/MMBtu)	Excess Emissions (yes/no)	NO _x Conc Exceeded CEM Span? (yes/no)	Comments: Reason for Missing or Invalid Data, or Excess Emissions
10/1/2021	0.021	0.020	No	No	
10/2/2021	0.021	0.020	No	No	
10/3/2021	0.020	0.021	No	No	
10/4/2021	0.020	0.021	No	No	
10/5/2021	0.021	0.021	No	No	
10/6/2021	0.023	0.021	No	No	
10/7/2021	0.023	0.021	No	No	
10/8/2021	0.025	0.021	No	No	
10/9/2021	0.025	0.021	No	No	
10/10/2021	0.021	0.021	No	No	
10/11/2021	0.020	0.021	No	No	
10/12/2021	0.020	0.021	No	No	
10/13/2021	0.020	0.021	No	No	
10/14/2021	0.019	0.021	No	No	
10/15/2021	0.020	0.021	No	No	
10/16/2021	0.025	0.021	No	No	
10/17/2021	0.025	0.021	No	No	
10/18/2021	0.024	0.022	No	No	
10/19/2021	0.023	0.022	No	No	
10/20/2021	0.022	0.022	No	No	
10/21/2021	0.024	0.022	No	No	
10/22/2021	0.027	0.022	No	No	
10/23/2021	0.025	0.022	No	No	
10/24/2021	0.026	0.022	No	No	
10/25/2021	0.027	0.022	No	No	
10/26/2021	0.026	0.022	No	No	
10/27/2021	0.025	0.023	No	No	
10/28/2021	0.023	0.023	No	No	
10/29/2021	0.021	0.023	No	No	
10/30/2021	0.021	0.023	No	No	
10/31/2021	0.021	0.023	No	No	
11/1/2021	0.021	0.023	No	No	
11/2/2021	0.021	0.023	No	No	
11/3/2021	0.021	0.023	No	No	
11/4/2021	0.021	0.023	No	No	
11/5/2021	0.022	0.023	No	No	
11/6/2021	0.022	0.023	No	No	
11/7/2021	0.021	0.022	No	No	
11/8/2021	0.021	0.022	No	No	
11/9/2021	0.021	0.022	No	No	
11/10/2021	0.020	0.022	No	No	
11/11/2021	0.020	0.022	No	No	
11/12/2021	0.021	0.022	No	No	
11/13/2021	0.022	0.023	No	No	
11/14/2021	0.022	0.023	No	No	
11/15/2021	0.023	0.023	No	No	
11/16/2021	0.023	0.022	No	No	
11/17/2021	0.021	0.022	No	No	
11/18/2021	0.019	0.022	No	No	
11/19/2021	0.020	0.022	No	No	
11/20/2021	0.022	0.022	No	No	
11/21/2021	0.026	0.022	No	No	
11/22/2021	0.027	0.022	No	No	
11/23/2021	0.026	0.022	No	No	
11/24/2021	0.022	0.022	No	No	
11/25/2021	0.022	0.022	No	No	
11/26/2021	0.023	0.022	No	No	

Date	Hourly daily average NOx (lb/MMBtu)	30-day rolling average NOx (lb/MMBtu)	Excess Emissions (yes/no)	NOx Conc Exceeded CEM Span? (yes/no)	Comments: Reason for Missing or Invalid Data, or Excess Emissions
11/27/2021	0.023	0.022	No	No	
11/28/2021	0.023	0.022	No	No	
11/29/2021	0.023	0.022	No	No	
11/30/2021	0.023	0.022	No	No	
12/1/2021	0.023	0.022	No	No	
12/2/2021	0.022	0.022	No	No	
12/3/2021	0.023	0.022	No	No	
12/4/2021	0.022	0.022	No	No	
12/5/2021	0.022	0.022	No	No	
12/6/2021	0.022	0.022	No	No	
12/7/2021	0.025	0.022	No	No	
12/8/2021	0.031	0.023	No	No	
12/9/2021	0.032	0.023	No	No	
12/10/2021	0.031	0.024	No	No	
12/11/2021	0.024	0.024	No	No	
12/12/2021	0.023	0.024	No	No	
12/13/2021	0.024	0.024	No	No	
12/14/2021	0.023	0.024	No	No	
12/15/2021	0.023	0.024	No	No	
12/16/2021	0.021	0.024	No	No	
12/17/2021	0.026	0.024	No	No	
12/18/2021	0.025	0.024	No	No	
12/19/2021	0.025	0.024	No	No	
12/20/2021	0.025	0.024	No	No	
12/21/2021	0.017	0.024	No	No	
12/22/2021	0.027	0.024	No	No	
12/23/2021	0.026	0.024	No	No	
12/24/2021	0.025	0.024	No	No	
12/25/2021	0.024	0.024	No	No	
12/26/2021	0.025	0.024	No	No	
12/27/2021	0.027	0.024	No	No	
12/28/2021	0.028	0.025	No	No	
12/29/2021	0.028	0.025	No	No	
12/30/2021	0.029	0.025	No	No	
12/31/2021	0.028	0.025	No	No	

Attachment B – Data Assessment Report

Data Assessment Report - East Side Fuel Gas Mix Drum H₂S CMS

Period ending date: December 31 **Year:** 2021
Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery
Source unit #: B008, B009, B010

<i>CEMS Manufacturer:</i> Siemens	<i>Model #:</i> Maxim II	<i>CEMS Serial #:</i> 30028039490020
<i>CEMS type:</i> Hydrogen Sulfide	<i>CEMS sampling location:</i> East Side Fuel Gas Mix Drum	
<i>CEMS span values as per the applicable regulation:</i>		
	<u>PPM</u>	<u>Percent</u>
SO₂		O₂
H₂S	300	CO₂

- I. **Accuracy assessment results** (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audit (RATA) for: (Not Applicable this quarter)

B. Cylinder gas audit (CGA) for H₂S (ppm):

	H ₂ S (ppm)	
	Audit #1	Audit #2
1. Date of audit	11/15/2021	11/15/2021
2. Cylinder ID number	CC416478	CC482384
Vendor	AirGas	AirGas
3. Date of certification	12/8/2020	11/11/2019
Expiration date	12/8/2023	11/11/2022
4. Type of certification	EPA Protocol	EPA Protocol
5. Certified audit value	74.18	163.50
6. CEMS response values	74.69	168.53
	73.22	166.80
	74.60	165.79
Average	74.17	167.04
7. Accuracy	-0.01%	2.17%

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)

D. Corrective action for excessive inaccuracy.

1. Out-of-control periods.
 - a. Dates: None
 - b. Number of days: NA
2. Corrective action taken: NA
3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report - TIU Fuel Gas Mix Drum H₂S CMS

Period ending date: December 31 **Year:** 2021
Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery
Source unit #: B015, B017, B019, B022, B029, B030, B031, B032, B033, B034, B035, P007

2000, 1.00			
CEMS Manufacturer: Siemens		Model #: Maxim II	
		CEMS Serial #: 30020117999300	
CEMS type: Hydrogen Sulfide		CEMS sampling location: TIU Fuel Gas Mix Drum	
CEMS span values as per the applicable regulation:			
	<u>PPM</u>		<u>Percent</u>
SO ₂		O ₂	
H ₂ S	300	CO ₂	

I. Accuracy assessment results (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audit (RATA) for: (Not Applicable this quarter)

B. Cylinder gas audit (CGA) for H₂S (ppm):

	H₂S (ppm)	
	Audit #1	Audit #2
1. Date of audit	11/16/2021	11/16/2021
2. Cylinder ID number	CC416478	CC482384
Vendor	AirGas	AirGas
3. Date of certification	12/8/2020	11/11/2019
Expiration date	12/8/2023	11/11/2022
4. Type of certification	EPA Protocol	EPA Protocol
5. Certified audit value	74.18	163.50
6. CEMS response values	74.47	164.58
	73.57	166.77
	73.25	164.27
Average	73.76	165.21
7. Accuracy	-0.57%	1.05%

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)

D. Corrective action for excessive inaccuracy.

1. Out-of-control periods.
 - a. Dates: None
 - b. Number of days: NA
2. Corrective action taken: NA
3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report - Reformer 3 Heater H₂S CMS

Period ending date: December 31 **Year:** 2021
Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery
Source unit #: B036

CEMS Manufacturer: Siemens	Model #: Maxim II	CEMS Serial #: 30029994471080
CEMS type: Hydrogen Sulfide	CEMS sampling location: Reformer 3 Heater Fuel Gas	
CEMS span values as per the applicable regulation:		
	<u>PPM</u>	<u>Percent</u>
SO ₂		O ₂
H ₂ S	300	CO ₂

I. Accuracy assessment results (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audit (RATA) for: (Not Applicable this quarter)

B. Cylinder gas audit (CGA) for H₂S (ppm):

	H₂S (ppm)	
	Audit #1	Audit #2
1. Date of audit	11/15/2021	11/15/2021
2. Cylinder ID number	CC416478	CC482384
Vendor	AirGas	AirGas
3. Date of certification	12/8/2020	11/11/2019
Expiration date	12/8/2023	11/11/2022
4. Type of certification	EPA Protocol	EPA Protocol
5. Certified audit value	74.18	163.50
6. CEMS response values	74.25	162.93
	74.69	158.87
	76.11	162.64
Average	75.02	161.48
7. Accuracy	1.13%	-1.24%

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)

D. Corrective action for excessive inaccuracy.

1. Out-of-control periods.
 - a. Dates: None
 - b. Number of days: NA
2. Corrective action taken: NA
3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report - East Flare H₂S CMS

Period ending date: December 31 **Year:** 2021
Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery
Source unit #: P003

<i>CEMS Manufacturer:</i> Siemens	<i>Model #:</i> Maxim II	<i>CEMS Serial #:</i> 30050531960100	
<i>CEMS type:</i> Hydrogen Sulfide	<i>CEMS sampling location:</i> East Flare		
<i>CEMS span values as per the applicable regulation:</i>			
	<u>PPM</u>		<u>Percent</u>
SO₂		O₂	
H₂S	300	CO₂	

I. Accuracy assessment results (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audit (RATA) for: (Not Applicable this quarter)

B. Cylinder gas audit (CGA) for H₂S (ppm):

	H₂S (ppm)	
	Audit #1	Audit #2
1. Date of audit	11/16/2021	11/16/2021
2. Cylinder ID number	CC416478	CC482384
Vendor	AirGas	AirGas
3. Date of certification	12/8/2020	11/11/2019
Expiration date	12/8/2023	11/11/2022
4. Type of certification	EPA Protocol	EPA Protocol
5. Certified audit value	74.18	163.50
6. CEMS response values	73.69	152.99
	72.97	160.37
	74.89	162.35
Average	73.85	158.57
7. Accuracy	-0.44%	-3.02%

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)

D. Corrective action for excessive inaccuracy.

1. Out-of-control periods.
 - a. Dates: None
 - b. Number of days: NA
2. Corrective action taken: NA
3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report - West Flare H₂S CMS

Period ending date: December 31 **Year:** 2021
Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery
Source unit #: P004

CEMS Manufacturer: Siemens	Model #: Maxim II	CEMS Serial #: 30050531960400	
CEMS type: Hydrogen Sulfide	CEMS sampling location: West Flare		
CEMS span values as per the applicable regulation:			
	<u>PPM</u>		<u>Percent</u>
SO ₂		O ₂	
H ₂ S	300	CO ₂	

I. Accuracy assessment results (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audit (RATA) for: (Not Applicable this quarter)

B. Cylinder gas audit (CGA) for H₂S (ppm):

	H₂S (ppm)	
	Audit #1	Audit #2
1. Date of audit	11/17/2021	11/17/2021
2. Cylinder ID number	CC475533	CC482384
Vendor	AirGas	AirGas
3. Date of certification	10/5/2021	11/11/2019
Expiration date	10/5/2024	11/11/2022
4. Type of certification	EPA Protocol	EPA Protocol
5. Certified audit value	74.29	163.50
6. CEMS response values	74.76	160.90
	74.07	161.97
	74.82	164.28
Average	74.55	162.38
7. Accuracy	0.35%	-0.69%

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)

D. Corrective action for excessive inaccuracy.

1. Out-of-control periods.
 - a. Dates: None
 - b. Number of days: NA
2. Corrective action taken: NA
3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report - East Flare TS CMS

Period ending date: December 31 **Year:** 2021
Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery
Source unit #: P003

CEMS Manufacturer: ThermoFisher	Model #: Sola II	CEMS Serial #: SL-10430115
CEMS type: Total Sulfur	CEMS sampling location: East Flare	
CEMS span values as per the applicable regulation:		
	PPM	
TS (low)	3,500	
TS (high)	350,000	

I. Accuracy assessment results (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audit (RATA) for: (Not Applicable)

B. Cylinder gas audit (CGA) for TS Low (ppm) and TS High (ppm):

	TS Low		TS High	
	Audit #1	Audit #2	Audit #1	Audit #2
1. Date of audit	10/27/2021	10/27/2021	10/28/2021	10/28/2021
2. Cylinder ID number	CC427785	CC269487	CC121778	AA073391
Vendor	Airgas	Airgas	Airgas	Airgas
3. Date of certification	3/13/2019	4/27/2021	3/18/2019	3/7/2019
Expiration date	3/13/2022	4/27/2024	3/18/2027	3/7/2027
4. Type of certification	RATA Class	RATA Class	RATA Class	EPA Protocol
5. Certified audit value	884.0	1,931	87,110	192,500
6. CEMS response values	895.9	2,110	90,928	194,073
	918.4	1,950	91,148	194,682
	926.4	1,961	91,087	195,711
Average	913.6	2,007.0	91,054	194,822
7. Accuracy	3.35%	3.94%	4.53%	1.21%

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)

D. Corrective action for excessive inaccuracy.

1. Out-of-control periods.
 - a. Dates: None
 - b. Number of days: NA
2. Corrective action taken: NA
3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report - West Flare TS CMS

Period ending date: December 31 **Year:** 2021
Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery
Source unit #: P004

<i>CEMS Manufacturer:</i> ThermoFisher	<i>Model #:</i> Sola II	<i>CEMS Serial #:</i> SL-10440115
<i>CEMS type:</i> Total Sulfur	<i>CEMS sampling location:</i> West Flare	
<i>CEMS span values as per the applicable regulation:</i>		
	<u>PPM</u>	
TS (low)	3,500	
TS (high)	350,000	

I. Accuracy assessment results (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audit (RATA) for: (Not Applicable)

B. Cylinder gas audit (CGA) for TS Low (ppm) and TS High (ppm):

	TS Low		TS High	
	Audit #1	Audit #2	Audit #1	Audit #2
1. Date of audit	10/26/2021	10/26/2021	10/26/2021	10/26/2021
2. Cylinder ID number	CC315721	CC89159	CC62361	CC874
Vendor	Airgas	Airgas	Airgas	Airgas
3. Date of certification	3/13/2019	12/22/2020	3/18/2019	3/7/2019
Expiration date	3/13/2022	12/22/2023	3/18/2027	3/7/2027
4. Type of certification	RATA Class	RATA Class	RATA Class	RATA Class
5. Certified audit value	884.3	1,968.0	86,970	192,300
6. CEMS response values	934.3	2,024.4	91,473	199,142
	939.6	2,011.5	91,284	200,568
	942.6	2,092.7	91,611	199,571
Average	938.8	2,042.9	91,456	199,760
7. Accuracy	6.16%	3.81%	5.16%	3.88%

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)

D. Corrective action for excessive inaccuracy.

1. Out-of-control periods.
 - a. Dates: None
 - b. Number of days: NA
2. Corrective action taken: NA
3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report – TIU Fuel Gas Mix Drum TS CMS

Period ending date: December 31 **Year:** 2021
Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery
Source unit #: B015, B017, B019, B022, B029, B030, B031, B032, B033, B034, B035, P007

<i>CEMS Manufacturer:</i> ThermoFisher	<i>Model #:</i> Sola II	<i>CEMS Serial #:</i> SL-09030713
<i>CEMS type:</i> Total Sulfur	<i>CEMS sampling location:</i> TIU Fuel Gas Mix Drum	
<i>CEMS span values as per the applicable regulation:</i>		
	<u>PPM</u>	
TS	3,500	

I. Accuracy assessment results (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audit (RATA) for: (Not Applicable this quarter)

B. Cylinder gas audit (CGA) for:

	TS (ppm)	
	Audit #1	Audit #2
1. Date of audit	11/2/2021	11/2/2021
2. Cylinder ID number	CC338715	CC218822
Vendor	Airgas	Airgas
3. Date of certification	3/13/2019	3/31/2020
Expiration date	3/13/2022	3/31/2023
4. Type of certification	RATA Class	RATA Class
5. Certified audit value	884.70	1844.00
6. CEMS response values	838.30	1981.01
	869.11	1959.94
	855.16	1945.52
Average	854.19	1962.16
7. Accuracy	-3.45%	6.41%

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)

D. Corrective action for excessive inaccuracy.

1. Out-of-control periods.
 - a. Dates: None
 - b. Number of days: NA
2. Corrective action taken: NA
3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report - Reformer 3 Heater NO_x/O₂ CEM

Period ending date: December 31 **Year:** 2021
Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery
Source unit #: B036

O ₂ CEMS Manufacturer: ABB	Model #: MAGNOS 106	CEMS Serial # 3.340932.7
NO _x CEMS Manufacturer: ABB	Model #: LIMAS 11	CEMS Serial # 3.340287.1
CEMS sampling location: Reformer 3 Heater stack		
CEMS span values as per the applicable regulation:		
	PPM	Percent
SO₂		25
NO_x	200	CO₂

I. Accuracy assessment results (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audit (RATA) for: (Not Applicable)

B. Cylinder gas audit (CGA) for O₂ (%) and NO_x (ppm):

	O₂ (%)		NO_x (ppm)	
	Audit #1	Audit #2	Audit #1	Audit #2
1. Date of audit	11/19/2021	11/19/2021	11/19/2021	11/19/2021
2. Cylinder ID number	CC278207	BLM000740	BLM004296	LL10026
Vendor	Airgas	Airgas	Airgas	Airgas
3. Date of certification	11/20/2017	10/4/2021	6/25/2020	11/12/2019
Expiration date	11/20/2025	10/4/2029	6/25/2028	11/12/2027
4. Type of certification	RATA Class	RATA Class	RATA Class	RATA Class
5. Certified audit value	5.97	14.09	54.81	117.20
6. CEMS response values	6.07	14.12	54.74	115.99
	6.08	14.12	55.88	116.16
	6.07	14.12	56.06	116.25
Average	6.07	14.12	55.56	116.13
7. Accuracy	1.68%	0.21%	1.37%	-0.91%

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)

D. Corrective action for excessive inaccuracy.

1. Out-of-control periods: None
 - a. Dates:
 - b. Number of days:
2. Corrective action taken:
3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report – East Alstom Boiler NO_x/O₂ CEM

Period ending date: December 31 **Year:** 2021
Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery
Source unit #: B034

O ₂ CEMS Manufacturer: ABB	Model #: MAGNOS 106	CEMS Serial # 00400003357006
NO _x CEMS Manufacturer: ABB	Model #: LIMAS 11	CEMS Serial # 00400003362206
CEMS sampling location: East Alstom Boiler stack		
CEMS span values as per the applicable regulation:		
	<u>PPM</u>	<u>Percent</u>
SO₂		20.0
NO_x	100	CO₂

- I. **Accuracy assessment results** (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audits (RATAs): (Not Applicable this quarter)

B. Cylinder gas audit (CGA) for O₂ (%):

	O ₂		
	Audit #1	Audit #2	Audit #3
1. Date of audit	11/12/2021	11/12/2021	11/12/2021
2. Cylinder ID number	BLM005117	SG9115771ALC	CC15126
Vendor	Airgas	Airgas	Airgas
3. Date of certification	5/22/2020	11/16/2017	6/1/2020
Expiration date	5/22/2028	11/16/2025	6/1/2028
4. Type of certification	RATA Class	RATA Class	RATA Class
5. Certified audit value	5.55	11.04	17.96
6. CEMS response values	5.41	10.87	17.68
	5.43	10.88	17.69
	5.43	10.88	17.69
Average:	5.42	10.88	17.69
7. Accuracy	-2.34%	-1.45%	-1.50%

Cylinder gas audit (CGA) for NO_x (ppm):

	NO _x		
	Audit #1	Audit #2	Audit #3
1. Date of audit	12/22/2021	12/22/2021	12/22/2021
2. Cylinder ID number	LL84223	SG917946CAL	ALM046373
Vendor	Airgas	Airgas	Airgas
3. Date of certification	12/14/2021	6/25/2020	4/30/2021
Expiration date	12/14/2024	6/25/2028	4/30/2029
4. Type of certification	RATA Class	RATA Class	RATA Class
5. Certified audit value	25.00	54.91	90.32
6. CEMS response values	25.16	54.54	91.13
	25.20	55.12	90.59
	24.87	53.57	90.14
Average:	25.08	54.41	90.62
7. Accuracy	0.32%	-0.91%	0.33%

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)

D. Corrective action for excessive inaccuracy.

1. Out-of-control periods. None
 - a. Dates:
 - b. Number of days:
2. Corrective action taken:
3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report – West Alstom Boiler NO_x/O₂ CEM

Period ending date: December 31 **Year:** 2021
Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery
Source unit #: B035

O ₂ CEMS Manufacturer: ABB	Model #: MAGNOS 106	CEMS Serial # 00400003354606
NO _x CEMS Manufacturer: ABB	Model #: LIMAS 11	CEMS Serial # 00400003361106
CEMS sampling location: West Alstom Boiler stack		
CEMS span values as per the applicable regulation:		
	PPM	Percent
SO ₂		20.0
NO _x	100	CO ₂

- I. **Accuracy assessment results** (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. **Relative accuracy test audits (RATAs):** (Not Applicable this quarter)

B. **Cylinder gas audit (CGA) for O₂ (%):**

	O ₂		
	Audit #1	Audit #2	Audit #3
1. Date of audit	11/12/2021	11/12/2021	11/12/2021
2. Cylinder ID number	BLM005117	SG9115771ALC	CC15126
Vendor	Airgas	Airgas	Airgas
3. Date of certification	5/22/2020	11/16/2017	6/1/2020
Expiration date	5/22/2028	11/16/2025	6/1/2028
4. Type of certification	RATA Class	RATA Class	RATA Class
5. Certified audit value	5.55	11.04	17.96
6. CEMS response values	5.48	11.00	17.89
	5.50	11.00	17.89
	5.49	11.01	17.89
Average:	5.49	11.00	17.89
7. Accuracy	-1.08%	-0.36%	-0.39%

B. Cylinder gas audit (CGA) for NO_x (ppm):

	NO _x		
	Audit #1	Audit #2	Audit #3
1. Date of audit	12/22/2021	12/22/2021	12/21/2021
2. Cylinder ID number	LL84223	XL000366B	ALM046373
Vendor	Airgas	Airgas	Airgas
3. Date of certification	12/14/2021	11/21/2017	4/30/2021
Expiration date	12/14/2024	11/21/2025	4/30/2029
4. Type of certification	RATA Class	RATA Class	RATA Class
5. Certified audit value	25	54.79	90.32
6. CEMS response values	25.18	55.32	90.40
	25.34	55.30	90.81
	25.57	55.02	90.51
Average:	25.36	55.21	90.57
7. Accuracy	1.44%	0.77%	0.28%

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)**D. Corrective action for excessive inaccuracy.**

1. Out-of-control periods. None
 - a. Dates:
 - b. Number of days:
2. Corrective action taken:
3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report – FCC/CO Boiler SO₂/NO_x/CO/O₂ CEM

Period ending date: December 31 **Year:** 2021
Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery
Source unit #: P007

O ₂ CEMS Manufacturer: ABB	Model #: Magnos 106	CEMS Serial # 3.340569.7
SO ₂ CEMS Manufacturer: ABB	Model #: Limas 11 UV	CEMS Serial # 3.340641.7
NO _x CEMS Manufacturer: ABB	Model #: Limas 11 UV	CEMS Serial # 3.340641.7
CO CEMS Manufacturer: ABB Automation	Model #: URAS- 26	CEMS Serial # 3.347698.3
CEMS sampling location: CO Boiler stack		
CEMS span values as per the applicable regulation:		
SO ₂	400 PPM	O ₂ 10.0 %
NO _x	350 PPM	CO 1000 PPM

I. Accuracy assessment results (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audits (RATAs): (Not Applicable this quarter)

B. Cylinder gas audit (CGA) for O₂ (%) and SO₂ (ppm):

	O ₂ (percent)		SO ₂ (ppm)	
	Audit #1	Audit #2	Audit #1	Audit #2
1. Date of audit	11/18/2021	11/18/2021	11/18/2021	11/18/2021
2. Cylinder ID number	ALM001730	CC423357	ALM001730	CC423357
Vendor	Airgas	Airgas	Airgas	Airgas
3. Date of certification	2/14/2017	2/14/2017	2/14/2017	2/14/2017
Expiration date	2/14/2025	2/14/2025	2/14/2025	2/14/2025
4. Type of certification	RATA Class	RATA Class	RATA Class	RATA Class
5. Certified audit value	2.49	5.53	98.98	219.40
6. CEMS response values	2.52	5.52	101.97	223.58
	2.52	5.52	103.90	224.87
	2.52	5.52	104.42	225.39
Average	2.52	5.52	103.43	224.61
7. Accuracy	1.20%	-0.18%	4.50%	2.37%

B. Cylinder gas audit (CGA) for NO_x (ppm) and CO (ppm):

	NO _x (ppm)		CO (ppm)	
	Audit #1	Audit #2	Audit #1	Audit #2
1. Date of audit	11/18/2021	11/18/2021	11/18/2021	11/18/2021
2. Cylinder ID number	XC030834B	CC222300	XC030834B	CC222300
Vendor	Airgas	Airgas	Airgas	Airgas
3. Date of certification	2/14/2017	2/14/2017	2/14/2017	2/14/2017
Expiration date	2/14/2025	2/14/2025	2/14/2025	2/14/2025
4. Type of certification	RATA Class	RATA Class	RATA Class	RATA Class
5. Certified audit value	80.86	187.80	249.50	551.00
6. CEMS response values	76.94	181.90	253.10	557.97
	77.77	183.61	253.86	556.93
	78.44	182.25	253.86	556.83
Average	77.72	182.59	253.61	557.24
7. Accuracy	-3.88%	-2.77%	1.65%	1.13%

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)**D. Corrective action for excessive inaccuracy.**

1. Out-of-control periods. None
 - a. Dates:
 - b. Number of days:
2. Corrective action taken:
3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report – FCC Regen Line SO₂/NO_x/CO/O₂/CO₂ CEM

Period ending date: December 31 **Year:** 2021
Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery
Source unit #: P007

SO ₂ CEMS Manufacturer: ABB	Model #: Limas 11 UV	CEMS Serial # 3.240685.3
NO _x CEMS Manufacturer: ABB	Model #: Limas 11 UV	CEMS Serial # 3.240682.3
CO CEMS Manufacturer: ABB	Model #: URAS 14	CEMS Serial # 3.240684.3
O ₂ CEMS Manufacturer: ABB	Model #: Magnos 206	CEMS Serial # 01400101195301
CO ₂ CEMS Manufacturer: ABB	Model #: Limas 11 UV	CEMS Serial # 3.240682.3
CEMS sampling location: FCC Regen Line stack		
CEMS span values as per the applicable regulation:		
SO ₂	500 PPM	O ₂ 25.0 %
NO _x	200 PPM	CO 1000 PPM
CO ₂	50.0 %	

I. Accuracy assessment results (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audit (RATA): (Not applicable this quarter)

B. Cylinder gas audit (CGA) for O₂ (%) and SO₂ (ppm):

	O ₂ (percent)		SO ₂ (ppm)	
	Audit #1	Audit #2	Audit #1	Audit #2
1. Date of audit	11/10/2021	11/10/2021	11/10/2021	11/10/2021
2. Cylinder ID number	XL001104B	BLM004046	CC443275	CC82139
Vendor	Airgas	Scott	Airgas	Airgas
3. Date of certification	11/20/2017	11/19/2015	11/21/2017	11/21/2017
Expiration date	11/20/2025	11/20/2023	11/21/2025	11/21/2025
4. Type of certification	RATA Class	RATA Class	RATA Class	RATA Class
5. Certified audit value	5.49	13.90	130.70	267.60
6. CEMS response values	5.50	14.05	129.54	267.84
	5.53	14.05	133.24	270.23
	5.54	14.06	134.25	271.21
Average	5.52	14.05	132.34	269.76
7. Accuracy	0.55%	1.08%	1.25%	0.81%

B. Cylinder gas audit (CGA) for NO_x (ppm) and CO (ppm):

	NO _x (ppm)		CO (ppm)	
	Audit #1	Audit #2	Audit #1	Audit #2
1. Date of audit	11/10/2021	11/10/2021	11/10/2021	11/10/2021
2. Cylinder ID number	LL34302	BAL3120	XL002639B	BAL3034
Vendor	Airgas	Air Liquide	Airgas	Scott
3. Date of certification	11/21/2017	8/12/2014	11/6/2017	11/12/2013
Expiration date	11/21/2025	8/13/2022	11/6/2025	11/13/2021
4. Type of certification	RATA Class	RATA Class	RATA Class	RATA Class
5. Certified audit value	54.90	116.00	277.60	543.00
6. CEMS response values	54.56	113.09	285.03	554.59
	56.20	114.13	285.56	554.82
	56.00	114.25	285.59	554.85
Average	55.59	113.82	285.39	554.75
7. Accuracy	1.26%	-1.88%	2.81%	2.16%

B. Cylinder gas audit (CGA) for CO₂ (ppm):

	CO ₂ (ppm)	
	Audit #1	Audit #2
1. Date of audit	11/10/2021	11/10/2021
2. Cylinder ID number	ALM063125	CC472694
Vendor	Scott	Scott
3. Date of certification	9/24/2018	9/24/2018
Expiration date	9/24/2026	9/24/2026
4. Type of certification	RATA Class	RATA Class
5. Certified audit value	13.11	27.20
6. CEMS response values	13.82	28.00
	13.93	28.07
	13.95	28.08
Average	13.90	28.05
7. Accuracy	6.03%	3.13%

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)**D. Corrective action for excessive inaccuracy.**

1. Out-of-control periods. None
 - a. Dates:
 - b. Number of days:
2. Corrective action taken:
3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report – Sulfur Recovery Unit (SRU #1) SO₂/O₂ CEM

Period ending date: December 31 **Year:** 2021
Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery
Source unit #: P009

SO ₂ CEMS Manufacturer: Ametek	Model #: 919	CEMS Serial #: ZB-919SP-10541-1
O ₂ CEMS Manufacturer: Ametek	Model #: 919	CEMS Serial #: ZB-919SP-10541-1
CEMS sampling location: SRU Thermal Oxidizer		
CEMS span values as per the applicable regulation:		
	<u>PPM</u>	<u>Percent</u>
SO₂	500	O₂ 10.0
NO_x		CO₂

I. Accuracy assessment results (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audits (RATAs): (Not Applicable this quarter)

B. Cylinder gas audit (CGA) for O₂ (%) and SO₂ (ppm):

	O₂ percent		SO₂ ppm	
	Audit #1	Audit #2	Audit #1	Audit #2
1. Date of audit	11/1/2021	11/1/2021	11/1/2021	11/1/2021
2. Cylinder ID number	ALM028323	CC13867	XC006260B	ALM004131
Vendor	Airgas	Airgas	Airgas	Airgas
3. Date of certification	9/13/2016	11/20/2017	2/24/2017	2/14/2017
Expiration date	9/13/2024	11/20/2025	2/24/2025	2/14/2025
4. Type of certification	RATA Class	RATA Class	RATA Class	EPA Protocol
5. Certified audit value	2.52	5.98	124.00	268.70
6. CEMS response values	2.54	5.99	123.72	268.60
	2.61	6.00	126.92	271.74
	2.59	6.00	127.07	270.94
Average	2.58	6.00	125.90	270.43
7. Accuracy	2.38%	0.33%	1.53%	0.64%

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)

D. Corrective action for excessive inaccuracy.

1. Out-of-control periods.
 - a. Dates:
 - b. Number of days:
2. Corrective action taken:
3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Data Assessment Report – Sulfur Recovery Unit #2 and #3 (TRP SRU) SO₂/O₂ CEM

Period ending date: December 31 **Year:** 2021
Company name: BP-Husky Refining LLC **Plant name:** Toledo Refinery
Source unit #: P037

SO ₂ CEMS Manufacturer: Ametek	Model #: 919	CEMS Serial #: ZX-919-10814-1
O ₂ CEMS Manufacturer: Ametek	Model #: 919	CEMS Serial #: ZX-919-10814-1
CEMS sampling location: TGT #2 Thermal Oxidizer stack		
CEMS span values as per the applicable regulation:		
	<u>PPM</u>	<u>Percent</u>
SO₂	500	O₂ 10.0
NO_x		CO₂

I. Accuracy assessment results (Complete A, B, or C below for each CEMS or for each pollutant and diluent analyzer, as applicable.)

A. Relative accuracy test audits (RATAs): (Not Applicable this quarter)

B. Cylinder gas audit (CGA) for O₂ (%) and SO₂ (ppm):

	O ₂ percent		SO ₂ ppm	
	Audit #1	Audit #2	Audit #1	Audit #2
1. Date of audit	11/1/2021	11/1/2021	11/1/2021	11/1/2021
2. Cylinder ID number	ALM028323	CC13867	XC006260B	ALM004131
Vendor	Airgas	Airgas	Airgas	Airgas
3. Date of certification	9/13/2016	11/20/2017	2/24/2017	2/14/2017
Expiration date	9/13/2024	11/20/2025	2/24/2025	2/14/2025
4. Type of certification	RATA Class	RATA Class	RATA Class	EPA Protocol
5. Certified audit value	2.52	5.98	124.00	268.70
6. CEMS response values	2.48	5.97	123.41	267.00
	2.51	5.97	131.35	267.46
	2.50	5.97	130.58	268.23
Average	2.50	5.97	128.45	267.56
7. Accuracy	-0.79%	-0.17%	3.59%	-0.42%

C. Relative accuracy audit (RAA) for: (Not Applicable this quarter)

D. Corrective action for excessive inaccuracy.

1. Out-of-control periods.
 - a. Dates:
 - b. Number of days:
2. Corrective action taken:
3. Results of audit following corrective action. (Use format of A, B, or C above.)

II. Calibration drift assessment - See Tables B1 & B2

Table B1 - Calibration Drift Assessment; Out-of-Control Periods for Part 60

CEMS	Start Time	End Time	Hours	Corrective Action Taken
TIUMD TS	10/1/2021 9:00	10/3/2021 6:00	45	Recalibrated and Returned Analyzer to service
WF H2S	11/9/2021 6:00	11/10/2021 10:00	28	Started troubleshooting sample flow, recalibrated for drift, and returned to service

Table B2 – Calibration Drift Assessment; Out-of-Control Periods for Part 63

CEMS	Start Time	End Time	Hours	Corrective Action Taken
TRP SO2	12/2/2021 7:00	12/2/2021 9:00	2	Recalibrated and Returned Analyzer to service.
TRP SO2	12/16/2021 7:00	12/16/2021 9:00	2	Recalibrated and Returned Analyzer to service.
SRU 1 SO2	12/27/2021 7:00	12/27/2021 9:00	2	Recalibrated and Returned Analyzer to service.

Per 40 CFR Part 63.8(c)(7)(i), a CMS is out of control if the zero, mid-level, or high-level calibration drift (CD) exceeds two times the applicable CD specification in the applicable performance specification or in the relevant standard. These instances are reported in Table B2 above.